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Syllabus

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DEMOGRAPHY

The beginning module of this paper is a stepping stone to understand population studies. Each and every social process primarily linked to human population. As a student of sociology, it is important to study the characteristics of population. Not only population determine structure and process of society, but society's characteristics also determines the population characteristics and dynamics. To understand the changing nature of society, the sociologists need to comprehend basic concepts and founding nature of population studies. This module help you to understand, what is population studies, definition, nature, subject matter as well as scope of population studies. Apart from that it also enable you to make sense in the relationship between population studies and other disciplines in social science, especially Demography, sociology and economics. The population data have great significance in the development of a nation. So, accurate data are necessary for making different policies with intention to upliftment of human society. So this module also deals with different sources of population data.

Population Studies, Definition, Nature, Subject matter and Scope of Population Studies

Population Studies

The word "population" is derived from the Latin verb "populare", "populate", and the Latin noun "populacio". According to McNicol, the word 'populare' in prehistoric times meant "generally wasted, plundered, or destroyed" and the noun populatio "was a plundering or despoliation." By the seventeenth century, many expressions had become obsolete. In 1597 Francis Bacon published an essay in which he first used the

word 'population'.

In England, population studies became a discipline in the middle of the seventeenth century. England, France, Germany, and a few other European countries were responsible for most of its early development. Later on, the United States of America made a significant contribution to the growth of this subject. In some ways, John Graunt's study is significant. Many areas of population studies were examined by him, and they are still considered important now. He studied the mortality and fertility data critically, pointing obvious flaws, biases, and shortcomings. The field of population studies owes a debt of gratitude to John Graunt for establishing the groundwork for new science.

Definition

Population studies and demography are often used interchangeably. Some researchers have attempted to differentiate between "demographic analysis" and "population studies". Demography is the science of population, so that describes and analyse population. More concretely, demography researches the size, composition and (age) structure, as well as the geographic distribution of human populations. Some definitions of demography are below;

➢ Guillard: "The mathematical knowledge of populations, their general movements, and their physical, civil, intellectual and moral state"

➢ Hauser and Duncan: "Demography is the study of the size, territorial distribution, and components of population, changes therein, and components of such changes, which may be identified as natality, mortality, territorial movement (migration), and social mobility (change of status)."

➢ Stenford: "In its most formal sense, demography is a very technical

and highly mathematical study of the vital statistics of human population (especially birth, death and migration) as well as of the characteristics of population structure (including age, sex and marital status) as they contribute to an understanding of population change."

➢ Frank Lorimer: "In broad sense, demography includes both demographic analysis and population studies. Demography studies both qualitative and quantitative aspects of population."

Demographic factors, various theories of population change and fertility, and variables relating to migration and policy matters are all covered in population studies. The nature of the population and its features are crucial aspects of sociology. The goal of population research is to raise population awareness and consciousness about the negative consequences of population growth. Apart from creating future predictions and engaging in effective planning, it also provides the remedy to population related issues.

The size, structure, and features of a population, as well as their distribution and changes over time, are all studied in population studies. The subject matter of population studies also includes the study of fertility and mortality, as implied by this statement. Migration and social mobility are components of population change in terms of size, structure, features, and distribution.

Nature of the population studies

One major area of population research is the components of population change or the processes. It's important to remember that the population of every location at any one time is determined by three types of events: births, deaths, and migration. There are three ways in which the population of a given area might change:

I) Children may be born in that area

(2) The inhabitants of that area may die

(3) People from other areas may move into that area

(4) Inhabitants of that area may move out.

These components of population change, namely births, deaths, and migration, are referred to as fertility, mortality, and migration, and are referred to as demographic or population variables since they define the size, growth, structure, and distribution of any population. Any population can be studied by looking at these demographic factors.

It's critical to grasp the significance of population structure and population characteristics at this point. Population structure refers to the population's age and gender distribution, whereas population characteristics refer to things like marital status, literacy and educational attainment, and labour force participation. However, population features can and do vary as a result of "social mobility," or persons moving from one status to another, such as from "single" to "married," as well as fertility, death, and migration.

Simply put, population studies encompass three major aspects: population size, composition, and distribution:
Size: When studying the size, researchers look at issues such as how many individuals reside in a certain demographic group, what changes are occurring in the group's size, and how these changes are affecting the group's size. It also seeks to determine how many people live in a specific location at any given time.

➢ Composition: In population study, composition comes second after size. All of the people who make up a population's measurable characteristics. When one of the groups has a bigger or smaller proportion of people with certain traits, the composition of the two groups can differ. Two group's compositions differ in a variety of ways. The most commonly employed demographic characteristics in population studies are age and sex.

➤ Distribution: The study of population distribution is concerned with questions such as how people are dispersed and what the nature of population distribution changes is? By dividing the population and calculating the ratio of people residing in different places, the distribution may also be studied.

Subject Matter and Scope of the population studies

Population studies cover a wide range of topics. Learners gain knowledge and comprehension of the current population condition in their nation and around the world through population studies. It also raises learners' understanding of the interconnections between the population situation in their own country and the rest of the world. It enables us to make deliberate, reasonable, and well-informed decisions about family size and population issues in the community, as well as State policy.

It gives us the knowledge, skills, attitudes, and values we need to assess and evaluate the influence of population change on students' futures, well-being, and the well-being of their neighbourhood, society, nation, and the globe. The nature, causes, changes, traits, cooperation, and distributional elements of the human population are studied in population studies. It investigates man's interactions with his surroundings as well as his overall quality of life.

On the one hand, this subject is concerned with a quantitative study of human population size, structure, characteristics, and territorial distribution, as well as the changes that occur in them. On the other hand, it is concerned with the study of population phenomena or their underlying causes. A population studying student is interested in characterizing and comparing the population's size, structure, characteristics, and geographical distribution, as well as the changes that occur as a result of the study of fertility, mortality, migration, and social mobility. He also tries to understand population occurrences and circumstances, as

well as changes in them, in biological, social, economic, and other contexts.

Population phenomena, for example, occur in a social context and cannot be examined in isolation. As a result, social phenomena must be included when prescribing, comparing, or explaining the determinants and effects of populationphenomena. As can be seen, population research is multidisciplinary, requiring knowledge of biology, genetics, mathematics, statistics, economics, sociology, cultural anthropology, psychology, politics, geography, medicine, publichealth, ecology, and other fields.

Understanding the world around us requires a thorough understanding of population processes. Births, deaths, the creation of households, and migration continue to be important indices of social change. Study of the population includes not only fundamental population change data, but also an examination of the causes and consequences of those changes. Sociologists study population by focusing on the social processes and consequences of population change. Fertility, mortality, migration, and the factors that generate variation in their occurrence are all studied using comparable methodologies.

Relation of Population Studies with other Social Sciences: Demography, Sociology, Economics

Population studies were once thought to be a branch of sociology, economics, or even geography. The social sciences provide the majority of the factors and ideas that explain demographic phenomena. The demographic transition theory is founded on an understanding of economics, sociology, political science, psychology, anthropology, and geography, among other fields. Biology, sociology, and economics all play a role in fertility theories. The variations in the birth rate cannot be explained as

separate events. Rather, they must be sought in the shifting economic, social, rural, psychological, and political environments in which they occur.

In a short, population qualitative study is concerned with the size, structure, characteristics, and spatial distribution of human populations. Its research focus included encompassed fertility, mortality, migration, and social mobility. Population study is interdisciplinary. It is concerned with all other sciences and their interrelationships.

A) Population studies and Demography

The discipline of the study of human population is known by too terms: (1) Population studies and (2) Demography. Demography, on the other hand, can be explained by pointing out that it is derived from the Latin term demos, which means
people, and hence is the science of population. Despite the fact that these terms are frequently used interchangeably, some scholars have attempted to distinguish between "demographic analysis" and "population studies." It is thought that "demographic analysis is limited to the study of the components of population variation and change," whereas "population studies are concerned not only with population variables but also with the relationships between population variables."

In a restricted sense, the term "demography" might be equivalent to "demographic analysis" or "formal demography," which is "mainly concerned with quantitative relations among demographic phenomena in isolation from their association with other phenomena." Demography can also be interpreted broadly to include the study of interrelationships between population and socioeconomic, cultural, and other variables, in addition to the quantitative study of population.

According to Philip M Hauser and Dudley Duncan, "Demography is the study of the size, spatial distribution, and composition of population changes, which can be identified as fertility, mortality, territorial movement, and social mobility". Demography's main goals are to gain a better understanding of the population's size, organization, and dispersion. To describe the population evolution in a certain location in the past. To forecast future demographic changes.

A) Population Studies and Sociology

Population studies were once thought to be a field of sociology, economics, or even geography. The social sciences provide the majority of the factors and ideas that explain demographic processes. Davis mentions two further fields of study: international and domestic migration, both of which require a
mix of sociology and demography knowledge. "Even in the study of mortality, age and sex differentials, while physiologically caused, may have socio-cultural bases and must be acknowledged as such.

For the consideration of six particular subjects, Broom and Selznick treat the population as one of the nine main "components of sociological analysis," which include family, city, minorities, industrial sociology, political sociology, and criminal behaviour. The population appears to be an essential aspect in sociological study, alongside social organization, culture, socialisation, primary groups, social stratification, relationships, collective behaviour, and ecology.

A) Population studies and Economics

The study of population is an important subject of research in economics, especially now that economic development and development planning are at the forefront of most developing

countries' concerns. The following topics have emerged over the years and continue to occupy an important place in both economics and population studies to gain a better understanding of the relationship between population trends and economic growth: population and development; manpower studies; the economics of fertility; and comprehensive economic- demographic models. It has even been stated that the number and quality of people who can live on Earth in the future will be determined by economic opportunity and economic organization, among other things. Growth, size, and distribution of the population can only be sensibly considered in the context of economic growth or change."

The study of population is far from a single discipline's domain. The boundaries between population studies and other social disciplines that deal with population are blurred. While it is true that population studies differ from other social sciences that deal with the population mostly because of their approach, there are also substantial distinctions in the range of population phenomena covered by other social sciences. Each social science has its own set of goals to achieve.

1.3 Sources of population data

The whole collection of individuals residing in our town, state, area, or country, as well as their respective characteristics such as age, sex, marital status, and gender, is referred to as the population. The term "population" refers to an entire group of people about whom we want to draw conclusions. The population data primarily informs us about the number of people who live or plan to live in a given location, as well as the total number of individuals of various religions and races who live in that area.

The data required for the study of population are obtained mainly through three sources: (1) Population censuses; (2) Registration of vital events, such as births, deaths, marriages and divorces; and (3)

Sample surveys.

(1)   Population census

The term "census" comes from the Latin word "censere," which means "to value or tax." In fact, inventory of various parts of the human population was created in ancient times in order to identify those who could be taxed, drafted into the military, or forced to labour. Because of these narrow motivations, instead of enumerating the entire population, only heads of households, farmers, merchants, landlords, males of military age, able- bodied men, and others were counted. Because it was rarely in the best interests of individuals to be counted or to provide accurate information. Modern censuses were frequently incomplete and inaccurate. Women and children were rarely counted in such a census. The modern census, on the other hand, seeks to count each individual.

History

In many countries, the census system was still in use. Egypt, for example. Babylonia, India, and China are all examples of ancient civilizations. Both Palestine and Rome have a long history. The Sumerians counted their population for taxation purposes almost 5,000 years ago. The activities of the inhabitants in ancient Egypt were investigated. Two censuses were conducted in Biblical times, one by Moses in 1491 B.C. and the other by David in 1017 B.C. The fourth book of Moses was dubbed "Numbers" to commemorate the occasion.

Censuses were frequently conducted in India during the reign of Emperor Ashoka (270 B.C.-230 B.C.). The Arthasasthra of Kautilya prescribed the collection of population data as a gauge of State policy for the purpose of taxes in the third century B.C. During the reign of Akbar in the sixteenth century, some population data was gathered. When a prospect of war loomed, the

Athenians and Greeks conducted a census, carefully enumerating those of military age, and counting the general population when food shortages loomed. As can be seen, population counting was done on occasion in the past, but it was mostly for the sake of taxes, conscription, or both. The operation was intermittent in nature, as it was only carried out when the need arose, and it was often limited to select parts of the population.

The modern census is vastly different from earlier attempts to count any people. Only in the seventeenth and eighteenth centuries did the present concept of a population census take shape. This notion entails a comprehensive enumeration of the entire population, as well as the collecting of information about some key features of each person at regular intervals, to learn about population growth trends, structure, and characteristics. "A census of population is the total process of collecting, compiling, evaluating, analysing and publishing demographic, economic and social data pertaining, at a specified time, to all persons in a country or in a' well- delimited part of a country." In other words, the enumeration of the entire population of a country or a region at a particular time is known as a census.

Features

• A census entails that each person is enumerated independently, but only once, and that some significant characteristics of each person are recorded separately. Sex, age, marital status, religion, literacy and educational achievement, economic activity, occupation, and other factors are among them.

• The census is conducted over a clearly defined area, such as the entire country or a specific region. The enumeration has a pre-determined reference period, and the total population is enumerated concerning that point in time.

• A census is taken on a regular basis. In some countries, the time between two censuses is ten years. In India, censuses have been held every ten years since 1881.

Contents of a census

It is critical to identify the contents of a census operation, such as the themes to be included in the census questionnaire, or the items on which information is to be collected from each individual in order to provide the most useful information to the government. Topics that are likely to elicit fear or pre-judgment, as well as difficult-to-answer questions, are normally not included in any census form.

From 1970 onwards, the United Nations Organization has compiled a list of recommended and other important topics to be included by censuses. Demographic data, such as place of birth, length of residency, work location, and so on; personal and family characteristics, such as age, sex, marriage, and so on; and economic features, such as kind of activity, occupation, and industry, are among the most important. In October 1968, a conference of key census data consumers was organised. In Starch-April 1969, the schedules recommended at the Data Users Conference were pre-tested in regional languages across India. The 1971 census finalized and surveyed the following schedules: (a) House list, (b) Establishment Schedule, and (c) Individual slip. The information obtained in the Individual Slip was used to create a new schedule called the Population Record.

Uses of Census data

The census is the most important source of fundamental national population data for administrative reasons as well as many elements of economic and social planning and research. It gives us data on population growth trends, changes in the population's age

and sex composition, the history of mortality and fertility, migration and urbanization, and so on. Along with the census enumeration, data on current fertility and mortality are sometimes obtained.

The census also helps us understand how the country's vocational and industrial mix has changed throughout time. In terms of literacy and educational attainment, as well as living standards and other cultural traits like religions and languages. It
can also be used as a foundation for creating samples for various types of surveys. Birth and death rates can be calculated using age and sex distributions provided from census data. This is a significant benefit for countries with insufficient birth and death registration data.

Data from the census are also used to create life tables and analyze economic progress. They are essential for our projections of future population growth trends, as well as for national, municipal, governmental, and private planning. Estimating future military and economic manpower, future school-going population and related requirements, future expansion in metropolitan cities, and food, water, housing, and healthcare requirements all benefit from a forecast of future population and its age-sex structure. In a democratic system, census statistics are also used to demarcate constituencies and allocate representation. Census data can also be used to estimate the current and a future number of voters. As a result, the census is a very useful source of information, and the data it collects around the world "is contributing to a revolutionary extension of global economic, sociological, and demographic knowledge."

(1) Vital statistics

Another important source of demographic data is the registration of vital events. It's critical to know what "vital events," "vital

records," and "vital statistics" mean. A person's entrance into the world (by birth) and exit from it (by death) are both regarded as crucial events since they signify the start and end of a person's life. From a demographic standpoint, a stillbirth or a foetal death is likewise regarded as a crucial event because it is linked to both birth and death. An individual's civil status may vary during his or her lifetime, from birth to death, for example, if he
or she marries, divorces, or is adopted. Such occurrences that involve a person's civil standing are also termed vital events.

Births, deaths, stillbirths, marriages, divorces, and other vital events are examples of vital occurrences that have been documented in vital records. The occurrence of a critical event is reported to the proper authorities by the people involved. For example, parents may record a birth, relatives may report a family death, or an individual may register his or her marriage.

Births, deaths, marriages, and divorces occur on a regular basis in any culture. As a result, similar occurrences are constantly documented. The crucial Registration system is a mechanism for recording and registering vital events. The data from the occurrences are collated, and the statistics that result are known as vital statistics.

Along with the vital events, some ancillary information is also recorded.

In case of a birth; The

Date of birth, The sex

of the baby,

The age of the mother

The number of her previous children

The order of the birth,

The residence of the motherIn

the case of a death,

Information on the date of occurrence,

Age and sex of the deceased

Place of occurrence

Usual residence of the deceased

Causes of death

The natural change in the population can be calculated using statistics of births and deaths in a certain area over a calendar year. The vital registration system, also known as civil registration, is a useful instrument for analysing population changes. However, it is critical that all occurrences that occur in a specific population be reported as they occur and that they are consistently recorded and collated.

In industrialized countries such as the United States of America, Canada, the United Kingdom, France, Sweden, Japan, Australia, and New Zealand, the vital registration system is nearly faultless. However, essential registration systems in many developing nations, such as India, Pakistan, Bangladesh, Indonesia, Thailand, Burma, Kenya, and others, are far from flawless. Because a large proportion of births and deaths are not reported in many countries, the data are fragmentary and imperfect.

The 'Incas' of Peru are credited for establishing a system of civil authority independent of the Church or other religious authorities for the registration of births, deaths, and marriages. Civil registration was adopted in the colonies of Massachusetts Bay and

New Plymouth in the United States later in the seventeenth century. Government clerks were in charge of registration in these civil systems, and the events of births, deaths, and weddings were recorded rather than the ceremonies
associated with these events. As a result, the process of secularising vital records began.

The Napoleonic Code was implemented in Prance in 1804 and gave impetus to this trend of the secularisation of important events. The individual's "legal and civil rights" were the focus of this Code. The state may award civil rights, and verification of one's claim to such rights was contingent on formal registration. The requisite documents were provided by birth, death, and marriage certificates, which were issued to the involved parties when the occurrences were reported and recorded. This is a watershed moment in the history of vital records. Today, vital event registration has evolved into a system that is viewed as a continuous, current, mandatory, and permanent record of crucial occurrences and their characteristics. This approach is most useful for delivering legal documents. It can also be used as a source of statistics for demographic research.

The British began the system of registering important occurrences in India more than a century ago. Administrators began to value the recording of crucial occurrences, particularly deaths, in the middle of the nineteenth century. India's death rate was extremely high during the period, possibly due to deplorable sanitary and public health conditions. If any sanitary reforms were to be implemented, it was vital to obtain reasonably trustworthy estimates of death rates. This necessitated a thorough and precise recording of the number and reasons for deaths.

The Bengal Births and Deaths Registration Act of 1873 was the first of its kind, and Bihar and Orissa followed suit. People had begun using entries in the record of births and deaths as evidence

in courts of law, according to the Sanitary Commissioner in 1874. People were aware of the legal

requirement to register births and deaths. The administration had already recognized the statistical significance of suchinformation.

The Indian Famine Commission emphasized the significance of collecting vital data once more in 1880. The Government of India passed the Births, Deaths, and Marriages Registration Act in 1886, which had little function because registration was entirely voluntary. By 1905, the registration system had covered almost 80% of India's census population (that is, British India and Princely India). Because more focus was placed on acquiring information on fatalities and causes of deaths than on other crucial events, data coverage and quality were poor. Because the goal was to control diseases and outbreaks, this is understandable. Several commissions, like the Royal Commission on Agriculture in 1954 and the Royal Commission on Lahour in 1928, made significant recommendations for expanding the scope and increasing the quality of vital statistics.

There was no standard legislation relating to the compulsory registration of births and deaths on an all-India level until recently, which impeded the improvement of registration statistics. The Registration of Births and Deaths Act of 1969, which covers the entire country, mandate the registration of all births, stillbirths, and deaths. The Act makes it illegal to fail to register such an event." The Registrar-General of India is in charge of the vital registration system as the central controlling body. At the national level, he is in charge of consolidating and tabulating the recorded data. He's also in charge of assessing andpromoting the registration system in different states and union territories.

Uses registration of Vital Events and Vital Statistics to the Individual.

A certificate is given to the individual concerned when a vital event is reported and registered. A birth certificate is prepared for the parents or guardians once birth is recorded and registered, for example. As a legal document with evidentiary value, such a certificate is useful.

In today's complex society, an evidentiary document such as a birth certificate, death certificate, marriage certificate, or other similar document is required to establish a person's identity, citizenship and nationality rights, and place in society, particularly concerning his or her privileges and duties as a member of that society. A paper like this is regarded as an important record for demonstrating a point. A vital event's time and place of occurrence.

One of the most significant applications of a birth certificate is to establish an individual's identification or to prove the fact of his or her birth. The best proof of an individual's age is his birth certificate, which contains his date of birth. The birth certificate can also be used to prove a person's nationality or citizenship when applying for a passport. It's also a legal document for establishing family ties, and it's very essential for resolving issues like inheritance and insurance claims.

A death certificate is required before a body can be disposed of. It's also necessary for resolving issues like inheritance and insurance claims. A marriage certificate can be used to prove a person's marital status as well as the validity of any children produced from that marriage. Apart from providing individuals with evidential documentation, the vital registration system also provides statistical data on births, deaths, weddings, divorces, and other events that can be used for demographic, medical, and public health research. The information gathered by this technology can be utilized for population estimation and projections. In the topic of population, many analytical

investigations based on vital statistics can be conducted. This idea can be shown with few instances of such investigations. Each child's birth order is recorded in the birth records. Changes in the percentage of higher-order births are researched using annual statistics on the distribution of children's birth orders. This type of research is useful for assessing the efficacy of an ongoing family planning programme. Fertility differentials are investigated using data obtained for birth registration.

The reason for death is frequently included on the death certificate. An examination of the causes of mortality gleaned from medical data has always aided in the growth of medical knowledge. This type of analysis can also be used to gauge a society's health. In fact, it can be confidently asserted that problems of preventive medicine were primarily detected in the cast through an analysis of death data. An analysis of death statistics can also be used to plan and evaluate public health programmes such as the malaria eradication campaign, tuberculosis and leprosy control programmes, and all forms of vaccination programmes.

Furthermore, vital statistics are used by planners and administrators in domains other than public health, such as developing physical facilities, educational facilities, teacher training facilities, food supply, and so on. Any society's social, economic, and health problems can be gleaned from its birth and death rates, as well as an examination of the causes of death, marriage, and divorce.

(1) Sample survey

Another form of data collecting for population research is the Demographic Sample Survey. In a sample survey, only a portion of the population is polled for infuriation. Which sample is typical of the entire and from which conclusions are formed using scientific sampling methods? In a country like Afghanistan, where there has

yet to be a census, population data is gathered through sample surveys, and estimations of its number, growth, structure, and features are made. Even in countries where regular census operations are carried out, the necessity for demographic data collecting through sample surveys is felt, because most countries only conduct censuses every ten years.

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Some important sample survey

By using the technique of the sample survey, several demographic surveys have been conducted in India. The National Sample Surveys, Surveys conducted by the Institute of Politics and Economics, Poona (1952-1956), the Mysore Population Study (1953), the Patna Demographic Survey (1955),the Family Planning Survey conducted by the Operation Research Group (1970) are some such important surveys.

A) National Sample Surveys

The fundamental goal of the National Sample Survey has been to collect data on some significant socioeconomic elements on a nationwide level for the entire country, utilizing the technique of a sample survey. The first round of the National Sample Survey (NSS) was undertaken in 1950, and since then, various rounds of the NSS have collected data on various topics. Fertility, mortality, population growth, economically active population, family planning, employment and unemployment, consumer spending patterns, housing circumstances, manufacturing industries, and physically disabled people have all been discussed thus far.

B) Patna Demographic Survey

This study covered 5,435 married women in Patna City and was conducted in 1955. Fertility was studied from two angles: 1) the

fertility performance of women in 1955 and 2) the fertility history of women. Differential fertility and completed family size were the other two topics covered in this study conducted by the Department of Statistics or the Patna University.

C) Family Planning Survey by the Operation Research Group

This survey, which covered the entire country except for Jammu and Kashmir, NEFA, and the offshore islands, gathered information from currently married women in reproductive age groups and their husbands on the following topics: awareness of family planning, willingness to use birth control to limit family size and spacing out children, knowledge of various family planning methods, and so on. The effects of target couples' socioeconomic and demographic traits on the above components were also examined.

(2) System of dual reporting

Birth and death data provided via the Civil Registration System are insufficient and erroneous in many developing nations, making them useless for computing birth and death rates, population growth rates, or any other sort of demographic study.

Although attempts to improve the coverage and quality of data on births and deaths have already begun, the entire registration system cannot be improved in a short amount of time. Meanwhile, annual data on births, deaths, and population growth is still required. Demographers created a new data collection approach 10 to 14 years ago to solve this challenge. This approach is known as the "dual report system," and it has been tried out in India, Pakistan, Turkey, Liberia, Colombia, Thailand, Morocco, the Philippines, and Kenya in some form or another, with positive results. This dual report approach is now widely recognized as a powerful and valuable tool for demographic reasons.

The following is a general description of the new system: In a dual reporting system, each birth and death is counted by two separate procedures: one is birth and death registration, and the other is a sample survey. This system's design is based on a sufficient number of tiny geographic samples. In each of these sample locations, a continuous record of births and deaths is preserved as they happen. At the same time, ancillary information about the events is recorded. Births and deaths, as well as other pertinent data, are collected by periodic retrospective sample surveys in the same sample region.

The data on each birth and death event received by continuous current registration and retrospective sample survey is matched, and the number of events missed by both techniques is calculated analytically. As a result, an accurate estimate of total births and deaths in the sample may be calculated. The following is a general description of the new system: In a dual reporting system, each birth and death is counted by two separate procedures: one is birth and death registration, and the other is a sample survey. This system's design is based on a sufficient number of tiny geographic samples. In each of these sample locations, a continuous record of births and deaths is preserved as they happen. At the same time, ancillary information about the events is recorded. Births and deaths, as well as other pertinent data, are collected by periodic retrospective sample surveys in the same sample region. The data on each birth and death event received by continuous current registration and retrospective sample survey is matched, and the number of events missed by both techniques is calculated analytically. As a result, an accurate estimate of total births and deaths in the sample may be calculated.

In India, in 1963-64, a new system known as the Sample Registration System was implemented, in which the dual report system technique was utilized to provide credible estimates of vital rates such as birth and death rates, as well as the population growth

rate for India and its many states. The Sample Registration System (SRS) also meets the need to track short- term changes in population growth in order to assess the impact of the national family planning programme and forecast population growth trends in the future. The Sample Registration System accomplishes this by giving estimates of India's birth and death rates, as well as population growth rates, for rural and urban areas, as well as for various States and Union Territories. The SRS estimates are thought to be fairly trustworthy.

(1) Population register

Population registers, also known as household registers, are nominative records that track the households and persons who make up a community over time. They track households over time, noting changes in their makeup and other features. Individuals are also tracked by registers, which keep track of when and how people enter and exit the family or community. The main goal of this method is to establish an individual's
identity and keep a watchful eye on them. However, population registers are an important source of a wide range of demographic data that is normally unavailable from both the census and vital registration systems. They also give an excellent account of the role of migration in a country's population change. They frequently keep track of their relationship with the household's head. They typically assess socioeconomic status at the household or individual level.

In the seventeenth century, Sweden is considered to have been the first country to implement this method. Population statistics can be gathered via constantly maintained population registers in some countries, such as Finland, Belgium, Israel, Taiwan, and Korea, where each person's name is entered. For tiny populations with a higher level of culture, it is evident that population registers may be kept more efficiently. One of the system's drawbacks is that such a

detailed register could be construed as an infringement on individual liberty. As a result, despite the abundance of population data available, only a few countries attempt to maintain population registers.

Individuals' significant migratory moves are also tracked. The major goal of establishing this population record system is to create and govern individual identities. However, these registers are also utilised to acquire demographic data such as current population numbers, internal migration, statistics on major events, and so on.

Authorities created population registries for a variety of purposes. The National Population Register (NPR) in India is a list of the country's regular residents. It is being prepared at the local (village/sub-town) level, as well as the sub-district, district, state, and national levels. The NPR's goal is to compile a comprehensive identity database for every regular citizen in the country. The database would include both demographic and biometric information. For decades, successive governments in China, whose systematic population registration has possibly the longest history, employed registers as administrative tools.

Civil administrations in areas of Europe introduced them as a tool for administration during the eighteenth century. In the late seventeenth century, Japan's government built a state wide system of local population registers to prevent the spread of Christianity, but it quickly discovered that the registers could be used for other purposes. Religious leaders kept population registers in various regions.

(3) International publication

The United Nations and other international organizations provide demographic data for the world and individual countries on a

regular basis. The Demographic Year Book is one of the most important publications. Data for the world and different countries are presented in this periodical, which is published annually by the United Nations, on topics such as population size, area, density, population growth, population characteristics, number of births and birth rate, number of deaths and death rate, number of marriages and marriage rate, and so on.

Every year, a different theme is chosen for the presenting of statistics on it. The unique issue chosen is covered in detail, and it could be one of the following: fertility (natality), mortality population census figures, or marriage. For example, the 1974 Demographic Year Book has thorough information on mortality. The magazine is extremely valuable not only for population studies students but also for anyone interested in population.

- Statistical yearbook: Information on the following topics is available for various countries around the world in this annual

publication of the United Nations: national accounts, hospital facilities and doctor availability, energy consumption, food production, educational facilities, newspaper circulation, labour force availability, and so on.

- Epidemiological and vital Records: Information on public health and mortality is offered for various countries throughout the world in this monthly periodical published by the World Health Organization.

Within the annual Human Development Report, the United Nations Development Programme (UNDP) also releases data on many social, economic, and demographic factors for the world and for different countries. Other international publications on world population data also include FAO's Production Year Book, the

International Labor Organization's Year Book of Labor Statistics, UNESCO's Statistical Year Book, and the World Health Organization's World Health Statistics Annual. Unlike the FAO publication, which focuses on the agricultural population.

A population is a necessary component of our survival. A population is defined as a group of people who share a characteristic or a set of characteristics. Population data are indicators of various population facts, such as fertility rate, mortality rate, migration, age, sex, marital status, and so on. These data aid in the formulation and implementation of various policies and plans in a country. The data is used to guide economic, social, cultural, and political development. Census, Vital Statistics, Sample Survey, Dual Report System, Population Registers, and International Publications are all good sources to look for population   da

UNIT 2   MALTHUSIAN THEORY

Structure

Post Malthusian Theories
Marxideason Population
Optimum Theory of Population
Theory of Demographic Transition;Models of Meadows, Enke, Becker and Easterlin;
Population and Development

THEORIES OF POPULATION

Population growth is the rise in the number of individuals in a population. Sociologists have long looked at population issues as central to understanding human interactions. Population theory is vital to making sense of social life because it holds assorted observations and facts together. Theorizing about population size and change has remained an important discipline since long back. Many of the philosophers from history like ancient Greek philosophers such as Plato, Aristotle, and chinese philosopher, Confucius as well as Indian philosopher Kautilya etc provide different perspectives regarding the relations between population and society. This population perspectives will guide you to understand relations between population and what is going on the society. In this module mainly looks at three theories about population, such as Malthusian Theory, Optimum Population Theory and Demographic TransitionTheory.

Thomas Robert Malthus

On February 14, 1766, Thomas Robert Malthus was born. Jacques Rousseau was a tremendous admirer of his father. Malthus received his education at home and enrolled in Jesus College, Cambridge, when he was eighteen years old. In 1793, he was elected a Fellow of the College, and in 1797, he has ordained a priest. He was appointed Professor of History and Political Economy at the East India Company's Haileybury

College in 1804, the year of his marriage. He was the father of three kids. In 1834, he passed away.

Malthus' Essay on Population was published in 1798 when he was a curate in a tiny Surrey parish. The title of Malthus' essay was As Essay on The Principle of Population as It Affects the Future Improvements of Society, and the essay's principal purpose was to rebut Condorcet and Godwin's utopian effusions. He claimed that the population's tendency to grow in proportion to its means of subsistence had resulted in human misery and placed various impediments in the way of human progress. Malthus spent five years researching other authors' publications on population issues, traveling across Europe, and gathering important statistical data. This crucial work by Malthus is a watershed moment in the history of population studies and one of the most well-known works of contemporary times.

The Malthusian Theory

Malthus began with two premises: "First, that food is vital for man's survival." Second, male-female passion is vital and will continue to exist in its current form. "Assuming then my postulate as granted, declare that the capacity of the population is higher than the power of the earth to create food for man," he continues after accepting these two laws as fixed by nature. When population growth is unregulated, it grows in a geometrical ratio. Only an arithmetical ratio increases subsistence. A basic understanding of numbers will reveal the magnitude of the first power in contrast to the second."

(1) Population is necessarily limited by the means of subsistence; (2) Population invariably increases were the means of subsistence increase unless prevented by some very powerful and obvious checks; (3) These checks, and the checks which

repress the superior power of the population and its effects on a level with the means of subsistence, are all very powerful and obvious checks; (4) These checks, and the checks which repress the superior power of the population and its effects on a level with the means of subsistence, are all very powerful and obviouschecks.

Accepting that mechanisms impending population growth were always at work, Malthus went on to study what the natural increase in population would be if left unchecked, as well as the pace at which the means of sustenance could be increased. He framed two of his basic propositions based on these two questions: population tends to double every twenty-five years, increasing in a geometrical ratio, while agricultural produce only increases by an equal amount every twenty-five years, increasing only in an arithmetical ratio, even under the most favourable conditions. "Taking the entire earth-the human species would increase as the numbers 1, 2, 4, 8, l6, 32, 64, 128,
256, and subsistence would increase as the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9," he concludes. In two centuries, the population to subsistence resources would be 256 to 9.

The population can be controlled in two ways, according to this theory: preventative and positive checks. Malthus understood that powerful checks were always in place to curb population expansion and divided them into two categories. "The first of these checks may properly be named the population preventive check, and their absolute necessity in the circumstances assumed is as definite and evident as the fact that man cannot existwithout food." Moral constraint and vice were mentioned by Malthus as voluntary checks based on man's thinking faculties.

Malthus defined moral constraint as "abstinence from marriage, either for a time or permanently, from prudential consideration,

with scrupulously moral conduct towards the sex in the interval," while expanding on these two preventive checks. And this is the only way to keep the population at the same level as the means of subsistence while maintaining virtue and happiness.

Malthus defined vice as the avoidance of childbirth- "a form of intercourse which renders certain of the women of great towns unpolitic," extramarital sexual connections, and prostitution. "Such as unwholesome occupation-severe labour and exposure to the seasons-bad and insufficient food and clothing arising from poverty-bad nursing of children-excesses 'of all kinds- great towns and manufactories- the whole train of common diseases and epidemics- wars, infanticide, plague, famine," said the positive checks.

Again, Malthus divided these positive checks into two categories: those caused by natural causes, which he labelled "exclusively misery," and another is, those that mankind brought upon itself, such as wars, excesses of all kinds, which could have been avoided but were brought about by vice and were the consequences of misery." The positive and preventive checks, according to Malthus, are inversely connected. To put it another way, where positive checks are highly effective, preventive checks are less effective, and vice versa. However, some of these checks are always active in all communities, albeit to varying degrees of efficacy. Despite these safeguards, Malthus thought that the inability of expanded food supplies to keep up with population growth always leads to some form of overpopulation.

Poor Law was another subject that Malthus was passionate about. Destitute Law was in effect in England at the time of Malthus, under which the local community or parish was

responsible for the maintenance of the poor and disabled. Previously, charity to the destitute and disabled was provided from a fund generated by taxes levied on the general population. The law, according to Malthus, brought more harm than good to society. It was believed that the law led to early marriage and high birth rates among the poor, causing the food-population balance to deteriorate further. As a result, he was a vocal opponent of the law and advocated for its repeal. Instead of donating to the impoverished, he advocated for the free use of small, uncultivated plots of land. As a result, he played a key role in the passage of the Reform Bill in 1834, which effectivelyrepealed the statute.

Malthus' essay sparked a lot of discussion and controversy. Although his supporters welcomed his work as one of the most important contributions to the study of population-economic interrelationships, others debated it and criticized it on a numberof counts.

Malthus has been criticized on the following points:

(1) He improperly insisted on restricting the land supply. The agricultural revolution of the 19th century; in which the system of crop rotation, chemical fertilizers, selection of plant varieties and livestock, improved quality of livestock led to a sharp increase in agricultural output. Malthus' gloomy predictions thus did not come true.

(2) Malthus grossly underestimated the significance of industrialization. Later developments did not take into account the more flavourful and reliable modes of transportation that assisted colonial empires in providing additional raw materials, exploitable land supplies, and new markets for manufactured goods.

(3)   His religious beliefs made it difficult for him to comprehend the possibility of widespread contraception use.

(4)   The ratios concerning population growth (Geometric ratio) and the method of subsistence (arithmetic ratio) had been based on a slender foundation and have been never in reality proved. Malthus's conclusion that population would double in a length of 25 years become primarily based on the proof of dubious American records. He had almost completely omitted the role of immigration.

(5)   One contention against Malthus was that he did not clearly distinguish between fecundity- the physiological capacity to reproduce and fertility- the actual reproductive performance measured in terms of live births- although the phenomenon of differential fertility had started making its impact about that time.

Optimum Population theory

The optimum population hypothesis is based on the link between population and resources. Edwin Cannan (1861-1935), an English economist, is credited with developing the notion of "Optimum Population." The origins of this concept can be traced back to the writings of a German professor, Karl Winkelblech (1810-1865), who, while discussing population theory and policy, classified nations into three categories based on population size: (1) under-populated nations; (2) over-populated nations; and (3) nations with normal populations, which means a population size that is conducive to the greatest possible productivity.

"At every given period, the population which can exist on a certain length of the land, consistent with the maximum productiveness of industry at that time, is definite," Cannan

emphasized, using the term "optimum population" as equivalent with the best possible population. Some writers have expanded the concept of the economic optimum to encompass entire well- being, health, a nation's lifespan, the ideal family size, natural resource conservation, power, defence, and other spiritual, cultural, and aesthetic aspects. "To mean the size of the population that results in the highest per capita income, the highest productivity as measured in various ways, or the highest level of other less well-defined economic indicators, such as economic welfare, level of living, real income, and, in some cases, employment," according to one interpretation.

However, according to most authors, the economic optimum was the primary issue in optimum population theory, and the concept of a population of optimal size for maximum productivity progressively gained acceptance. Later events, on the other hand, prompted a critical re-evaluation of this notion. The concept of the optimum population was notable for reconciling the optimistic and pessimistic theories of population because it meant that population growth was good up to a certain point, after which any further growth was negative.

Criticism

This notion has been challenged for a variety of reasons.

• Several authors have questioned its practical application, claiming that an optimum population in the sense of an optimum point can never be identified. In fact, fairly recent attempts have been made to calculate a country's optimal population.

• The average life duration of people should be the most appropriate factor for determining the optimal population. People's life expectancy reflects the ultimate end of an optimal population-resource balance.

• Raised doubts about the concept's practical usefulness, citing the difficulty in determining the optimal population size in any given area. The concept of the optimum population has been criticized for being largely static, ignoring the dynamism of technology, resources, social structure, and trade, among other things.

Demographic Transition Theory

The demographic transition theory is the most popular explanation for human population growth. Changes in the number of the world's population throughout time are solely due to changes in fertility and mortality over the same period. By adding people born during the era and subtracting those who died during the period, the world population alters over time. Warren S. Thompson (1929) and Frank W. Notestein (1945) were the first to create demographic transition theory, which was later expanded by Kingsley Davis (1963). In the process of social modernization, four stages of mortality and fertility change, according to the hypothesis.

The demographic transition is a model and theory that describes the change in a country's birth and death rates from high to low as a result of its economic progress. Countries go through a period of transition as they become more industrialized, during which death rates fall but birth rates remain high. As a result, the population is fast increasing. Four stages can be identified in this transformation.

Stage 1 - The pretransitional or pre-industrialization stage.

It lasted for thousands of years, during which time the planet had high birth and mortality rates as well as stable population growth. It demonstrates a high rate of variable mortality and a high fertility rate. Because of the relative volatility of death

rates, there were some times of natural increase and some periods of natural fall throughout this stage, but there was relatively little change in population size over the longer period.

Stage- 2- Transitional stage

Around the year 1700, the globe entered a transitional stage. Modernization and industrialization were responsible for shifting countries throughout the world, with the first result being a decrease in mortality. Because fertility remained high after mortality had dropped, this intermediate stage resulted in a rapid population increase. The population growth rate was strong at this time. Guatemala, Iraq, and various countries in Sub-Saharan Africa are examples of today's countries.

Stage- 3- Post-industrial stage

Because of reduced birth and mortality rates, population growth slowed during this stage. Fertility began to fall during this period. India and Malaysia are two such countries today.

Stage- 4- Incipient decline

Only increases infertility, such as the post-World War II baby boom in the United States, cause population growth. However, there are minor changes in fertility throughout this stage. As a result of these fluctuations, both natural increases and decreases will occur. Because it's impossible to predict how low fertility will go, the word "incipient" is employed. The incipient decline can be seen in Brazil, Germany, and Japan.

Unlike most other population theories, the demographic transition theory was founded on actual European country experience. These countries had gone through a demographic transition from having a high birth rate and a high death rate to

having a low birth rate and a low death rate. The idea is a generalization of the historical sequence of changes in vital rates, such as birth and death rates, rather than a scientific theory with testable propositions. The notion is based on some of Landry and Thompson's early research.

It was later developed in the mid-1940s by Notestein and Blacker. When the theory's relevance to less developed regions was realized, it took on a far larger meaning. The demographic transition hypothesis was widely accepted as a thorough account of changes in population behaviour until the 1970s, despite the fact that its results had never been empirically validated.

In 1909, Landry may have been the first academic to seek to discover different demographic regimes associated with production. He distinguished three different regimes: primitive, middle, and modern. Although not necessarily at their biological maximum, birth rates remain steady at a very high level and are unaffected by social and economic forces under the primitive regime. However, in the intermediate regime, economic variables begin to influence fertility levels, primarily through a delay in marriage as people become aware of particular standards of living and strive to maintain them. Finally, in the contemporary era, the birth rate continues to fall regardless of economic circumstances, and it becomes common to practise as a result of shifts in people's aspirations and views regarding their living standards.

Likewise, Warren Thompson attempted to develop a typology to capture the transition from a stage of high fertility and mortality rates to a stage of low fertility and mortality rates in 1929. He proposed the three groups of countries below, which generally correspond to three stages of demographic transition.

1.   In the first category, he included countries with extremely high fertility and death rates that were less well-controlled. The death rates appeared to be stabilizing at a faster rate than fertility rates, indicating that future growth will be rapid.

2.   He classified the countries in the second category as those whose fertility and death rates had begun to decline, particularly among certain groups. The decrease in mortality was, however, faster than the decrease in fertility rates, indicating that the rate of population increase is continuing to accelerate.

3.   Finally, countries with rapidly dropping birth rates, indicating a deceleration of population growth, fell into the third category.

Notestein characterized three types of populations, according to their stage of demographic evolution.

(1) Populations in the early stages of decline, where fertility has fallen below or is approaching replacement level, e.g., populations in Europe and the United States, New Zealand and Australia.

(2) Populations in "transitional growth," i.e. populations of the Soviet Union, Japan, and some Latin American countries, where "birth and death rates are still high and growth is rapid, but the birth rate decline is well established," e.g. populations of the Soviet Union, Japan, and some Latin American countries.

(3) Populations in the "high growth potential" stage, in which "modality is high and variable, and is the primary determinant of growth, while fertility is high and has shown no signs of declining." Rapid growth is projected in these populations as

soon as technological advancements allow for a decrease in mortality, such as populations in most Asian, African, and Latin American countries.

The demographic transition that occurs as a result of economic progress, as seen in todays industrialised countries. "All modern societies that have transitioned from a traditional, agrarian-based economic system to a predominantly industrial, urbanized one have also transitioned from high mortality and fertility to low mortality and fertility."

Notestein's work was quickly followed by C. P. Blacker's attempt in 1947. The transition was broken down into five stages, according to Blacker.

I.   The 'high stationary stage,' with high birth and death rates

II.   The 'early expanding stage,' with high birth rates but declining death rates

III.   The 'late expanding stage,' with declining birth rates but rapidly declining death rates

IV.   The 'low stationary stage,' with low birth and death rates

V.   The 'declining stage,' with both birth and death rates at low levels but the latter exceeding the former.

Among the later demographers who elaborated on the role of development and modernization in the process of demographic behaviour transformation. In 1958, these two demographers looked at how birth and mortality rates changed over time as a result of economic development. As a generalized account of the evolutionary process, the demographic transition theory has

been frequently used. Even today, the hypothesis is often acknowledged as a helpful tool for describing a country's demographic history.

Critics

- The experiences of different European countries were not uniform, in the sense that the sequences of stages stated in the theory statement were not the same.

- It lacks a theoretical explanation for an important force, namely, fertility.

- The theory of demographic transition cannot truly be considered a "theory" because it fails to meet a key condition of any theory, namely, the extraction of fundamental processes from a phenomenon and the identification of critical variables. This theory does not provide fundamental explanations for the reduction in fertility, nor does it identify the critical variables involved in the process. As a result, it is useless in terms of forecasting.

- The theory does not apply to the world's developing countries, which have recently experienced exceptionalpopulation increase due to a sharp drop in death rates.

Economic growth is the expansion in the swelling balanced market estimation of the products and enterprises delivered by an economy after some time. It is customarily estimated as the per cent rate of increase in real GDP, or real GDP. Development is normallydetermined in real terms - i.e., swelling balanced terms to dispose of themisshaping impact of expansion on the cost of products created. Estimation of monetarydevelopment utilizes national income bookkeeping. Since monetary development is estimated as the yearly per cent change of aggregate national output (GDP), it has every one of the favourable circumstances and downsides of that measure. The monetary development rates of countries are normally thought about utilizing the proportion of the GDP to populace or per-capitaincome.

The rate of economic growth alludes to the geometric yearly rate of development in GDP betweenthe first and themost recent year over some stretch of time. Thisdevelopment rate is thepattern in thenormal degree of GDP overthe period, which overlooks the vacillations in the GDP around this pattern. An expansion in monetary development brought about by progressively proficient utilization of sources of info (expanded efficiencyof employment, physical capital, vitality or materials) is alluded to as concentrated development. Gross domestic product development caused uniquelyby increases in the measure of sources of info accessible for use (expanded populace, new domain) is called broad development. Improvement of new products and investments likewise makes economic growth.

UNIT 3   FERTILITY

Structure Measurement of Fertility

OBJECTIVES

Aftergoingthroughthis unit, youwillbeableto:

- Understandtheconceptof macroeconomicequilibrium
- Differentiatebetweenstockandflowequilibrium
- Understandtheconcept of fullequilibrium

INTRODUCTION

Fertility and Mortality: Biological, Cultural and SocialFactors

A- Fertility

Fertility, one of the three components of population dynamics (the other two being mortality and migration), plays a critical role in any population analysis. Fertility is a positive force in population dynamics that ensures biological replacement and the continuation of human society.

Concept of fertility

The term fertility is used to define the number of children born   to

each woman. The fertility of a woman has always been a matter of major concern to all aspects. Fertility being related to birth rate and birth rate is determined in terms of crude birth rate. The growth of population depends on the human fertility. Fertility is a positive force through which the population expands. As a result, the Demographic and Health Surveys programme has prioritised the gathering of data on fertility levels, trends, and differentials. The continued collection of fertility data has been essential to recognizing the important role. It using them as the primary basis for developing itspopulation policies.

➢ Lewis and Thompson: - "Fertility as the actual reproductive performance of a woman or group of women".

➢ Barclay: - "Fertility is an actual level of performance in a population, based on the number of live births that occur. Fertility can be ascertained from statistics of birth. The study of fertility does not indicate the level of fecundity for which there is no direct measurement".

The fertility of an individual is limited by her or his fecundity. Fecundity is the capacity to conceive or bear children. According to Lewis and Thompson, "Fecundity is a biological potential-the physiological capacity to participate in reproduction. The absence of this potential is referred as infecundity or sterility". The term fecundity is biological. It refers to the maximum fertility level that can be obtained. So simply we can say that, fertility is the actual reproductive performance. Fertility is closely related with birth rate. Despite the fact that birth is a biological process, it is influenced by social, economic, religious, and moral factors. The statistics of birth can be used to study fertility. There is no direct measurement for fecundity.

Few terms that are useful in the context of the study of fertility;

❖ Sterility: Sterility is the physiological inability to effect sexual reproduction in a living thing, members of whose kind have been produced sexually. Sterility can be caused by a variety of factors. It can be inherited or acquired from the environment, such as through physical damage or sickness, or by radiation exposure.

❖ Natural Fertility: The concept of natural fertility was first defined by the French demographer Louis Henry. One persistent aim of Henry's work was the search for detailed information on fertility that was not influenced by deliberate birth control. It was this search for a physiological "natural" benchmark against which to judge the fertility patterns of populations whose members did use contraception that led to the formulation of the concept of natural fertility. Louis defined natural fertility as natural the fertility which exists or has existed in the absence of deliberate birth control. Simply we can say that, "Natural fertility is the fertility that exists without birth control".

❖ Contraception: Contraception is defined as the use of various devices, sexual practises, chemicals, medications, or surgical procedures to intentionally prevent conception. As a result, any device or action that prevents a woman from becoming pregnant as a contraceptive. Effective contraception allows a couple to enjoy a physical connection without worry of an unwanted pregnancy in any social setting, and it gives them enough freedom to have children when they want to. The goal is to achieve maximum comfort and privacy at the lowest cost and with the fewest possible adverse effects.

Fertility and population

Fertility numbers define a population's age structure, which in turn influences the population's social, economic, and demographic aspects. Any population program's effectiveness is thus contingent on a thorough understanding of the relationship between fertility and other variables. Fertility is divided into two categories: biological and social. The biological component refers to the ability to reproduce, which is a necessary but insufficient requirement for parenthood. The social context in which individuals live has a huge impact on whether or not children will be born and, if so, how many. The number of live births associated with a woman or a group of women is referred to as fertility. It is not to be confused with fecundity, which refers to a person's physiological ability to reproduce.

The most common sources of fertility data are Vital Registration or Civil Registration Systems. Fertility data is also available from periodic census counts and sample surveys. Each calendar year is represented by the data from the vital registration system. A direct question on 'the number of children ever born' is asked of ever-married women in the national annual census, which is an important source of statistics on the topic. During the census

enumeration in nations where vital or civil registration is not reliable, a question about the number of births to ever-married women in the previous 12 months is asked. Various demographic sample surveys, such as the National Family Health Survey (NFHS), give information on fertility-related issues that aren't normally available in civil registration or periodic census counts.

Measure of fertility

Fertility measures are devices that quantify a population's fertility performance over time. These measurements are used to compare the fertility behaviour of different populations and to look at population fertility changes over time.

Crude Birth Rate

Because of its simplicity in concept and measurement, the crude birth rate (CBR) is one of the most often used indicators of fertility. It is the proportion of total recorded live births in a population throughout a calendar year to the population at the mid-point of the year. The following formula is used to compute the crude birth rate:

Crude Birth Rate ¬= (B/P) K

where B is the number of live births in a calendar year, P is the mid-year population, and K is a constant which is generally taken as 1,000 in all the measures except otherwise mentioned. CBR is thus the number of live births per 1,000 persons in a calendar year.

General Fertility Rate

General Fertility Rate (GFR), defined as the ratio between the total live births and number of women in the reproductive age span. It is calculated as under:

General Fertility Rate (GFR)= (B / W15-44) K

Where W15–44 is the mid-year population of women in the reproductive ages. Necessary modification can be made where the upper limit of the reproductive span is taken as 49 years. Apart from age, marital status is also a very important differential factor fertility. In almost all the societies of the world, birth is allowed only in a marital bond

General Marital Fertility Rate

A measure calculated in this manner is termed as General Marital Fertility Rate (GMFR) and can be mathematically expressed as:

General Marital Fertility Rate (GMFR) ¬ = (B/Wm 15-44) K

Where Wm 15-44 is the mid-year number of married women in the reproductive ages.

Age Specific Fertility Rate

Age Specific Fertility Rate (ASFR) is calculated in the following manner:

Age Specific Fertility Rate (ASFR) = (nBX / nWX) K

Where nBx is the number of live births to women in the age group x to x + n, and nWx is the mid-year number of women in the age group x to x + n.

Age Specific Marital Fertility Rate

It's worth noting that this metric can also be calculated using only currently married women in a specific age range. The Age Specific Marital Fertility Rate (ASMFR) is used in this scenario and is expressed as:

Age Specific Marital Fertility Rate (ASMFR) = (nBX / nWmX) / K

Where nW mx is the mid-year number of married women in the age group x to x + n.

Total Fertility Rate

ASFR may be calculated for both single-year age data and large age categories. The reproductive age span is usually divided into five-year age segments, with the upper limit of the reproductive age span numbered six or seven. This makes comparing two or more populations a time-consuming process. A comparison can be made using the Total Fertility Rate (TFR), which is a summary measure of ASFR. This is calculated by multiplying the total ASFR by the age group's breadth, then dividing the result by the radix value (i.e. 1.000). Take into account the following:

Total Fertility Rate (TFR) = {($\sum$ASFR) n} 1/K

General reproduction Rate

Data on the number of live births by sex, as well as the distribution of women in different age groups within the childbearing age span, are needed to calculate GRR. If neither of these is available, GRR can be calculated by multiplying TFR by the femininity ratio (i.e. ratio between the number of female

babies born and the total live births in a population). In this scenario, GRR will be calculated using the formula:

Gross Reproduction Rate ¬GRR= TFR * Femininity Ratio

Factors Affecting fertility: Biological, social and cultural

Most demographers want to know if, how, and why various social, economic, cultural, and environmental factors influence both a woman's likelihood of having a baby and the number of infants she will have in her lifetime. Social class, economic status, religious views, psychological disposition, attitudes toward children, and other factors, for example, have been found to impact a woman's desire to have a kid, as well as the number of infants she will have (ranging from zero to a positive number).

The fertility level of a population is determined by a variety of social, demographic, and economic factors. These fertility determinants, on the other hand, do not work in isolation. They are inextricably linked, and the total effect of their interactions is the degree of fecundity in a community. Because of the varied effects of these variables, there is a lot of variety in fertility levels across different groups of the same population.

Biological or physiological factors

Kingsley Davis and Judith Blake, two well-known demographers, published an influential paper in 1956 regarding the behavioural and biological elements that are "intermediate" and hence directly influence fertility. The three variables of intercourse, conception, and gestation/parturition (the act or process of giving birth) should be considered intermediate to the numerous other social, economic, cultural, and environmental factors that influence fertility, according to the authors. (In the

section on social and cultural influences impacting fertility, the intermediate variable will be explored.)

The "Davis and Blake paradigm for studying the determinants of fertility has received considerable acceptance," according to John Bongaarts, "but it has proven challenging to incorporate into quantitative reproductive models." As a result, he established the following seven proximate determinants: (1) marriage and marital disruption; (2) contraceptive use and effectiveness; (3) prevalence of induced abortion; (4) duration of postpartum infecundability; (5) waiting time to conception; (6) risk of intrauterine mortality; and (7) onset of permanent sterility.

(1) Marriage and marital disruption

In terms of marriage and marital disruption, this variable was designed to measure the proportion of women in the population who were of reproductive age and engaged in regular sexual activity; in traditional civilizations, sexual behaviour was mostly limited to marriage.

2) Contraceptive use and effectiveness

The contraception variable reflects intentional contraceptive actions such as abstinence and sterilization, which are used to minimize the risk of pregnancy.

(3) Prevalence of induced abortion

All practices and behaviours that intentionally interrupt pregnancies are classified as induced abortion.

(4) Duration of postpartum infecundability

According to Bongaarts, the period of postpartum infecundability is as follows: "Following a pregnancy, a woman stays infertile (i.e., unable to conceive) until the usual rhythm of ovulation and menstruation is restored." The length of the period of infertility is determined by the length and intensity of lactation."

(5) Waiting time to conception

The waiting time to conception refers to a woman who does not use contraception being able to conceive "for only a short period of approximately two days during the menstrual cycle when ovulation occurs." The length of this fertile phase is determined by the viability of the sperm and the ovum."

(6) Risk of intrauterine mortality

The risk of intrauterine mortality reflects the reality that many conceptions do not result in live births due to miscarriages, spontaneous abortions, or stillbirths.

(7) Onset of permanent sterility

The start of permanent sterility, on the other hand, reflects the fact that "women are sterile before menarche...and after menopause, but a pair may become infertile before the woman reaches menopause for causes other than contraceptive sterilization."

(Menarche is the beginning of the female reproductive period, signalled by the first menstrual flow, and menopause is the end of that period, signalled by the termination of menstruation.)

Tara kanitkar and Asha Bhende point out some physiological factors affecting fertility.

Adolescent Sterility: Because the age of marriage consummation and menarche coincides in the easiness of the majority of women in India, the prevalence of adolescent sterility can be studied. For girls between the ages of 13 and 17, there is a certain amount of adolescent sterility. Because of the irregularity of the ovulatory cycle, this occurs.

The average interval between successive births and post-partum sterility: During a woman's reproductive lifespan, she will experience periods of temporary sterility. In addition to the above-mentioned period of adolescent infertility, the role of post-partum sterility must be recognised. The mother is often sterile for a period of time after the delivery of a child because the menstrual cycle is not resumed, or if it is, the earlier cycles are anovulatory. The chances of conceiving at this time are extremely slim, hence this period of temporary sterility is referred to as the post-partum sterile period.

Primary and Secondary sterility: The amount of primary and secondary sterility among women or couples affects the natural fertility of any community, as a certain percentage of women or couples are unable to reproduce either throughout their lifetimes or after having one or more children. The percentage of women or couples that suffer from primary sterility—that is, couples who have never had any children—determines the average number of children ever born per woman.

The severity of fecundity impairment or secondary sterility— that is, the incapacity of women who do not use contraception to reproduce after having one or more children—is another key physiological factor impacting population fertility. Secondary sterility can occur naturally or as a result of certain pathological disorders, illnesses, or an injury after childbirth. Secondary

sterility research is crucial for predicting family growth in the future.

Reproductive wastage: Another physiological constraint on unlimited fertility is the level of foetal wastage, which includes abortion and stillbirths, and varies by country and location. Such data is often gathered using a sample interview survey.

Reproductive Wastage

"Reproductive wastage in broad term refers to bas obstetric history in the patient by means of recurrent pregnancy loss. Recurrent spontaneous absorption is defined as loss of three or more consecutive pregnancies prior to 20 weeks of gestation. Other contemporary synonyms for reproductive wastage are fetal wastage, fetal loss, perinatal mortality, perinatal morbidity, pregnancy wastage, pregnancy casualty, or reproductive failure.

Savino Sciascia and Munther Khamashta point out that Fetus Wastage means Fetal losses as occurring after 10 weeks' gestation or early delivery, before 34 weeks' gestation due to severe pre-eclampsia or placental insufficiency, represent a severe and specific manifestation of Antiphospholipid syndrome. (Antiphospholipid syndrome can cause blood clots to form within the arteries, veins and organs. It can also cause miscarriage and stillbirth in pregnant women.)".

"Pregnancy wastage is the term used when the couple is able to conceive, but unable to produce a live birth".

Social and cultural factors affecting fertility

The following are some of the ways Davis and Blake expandedon the three intermediate variables:

(1) The amount of intercourse is affected by the proportion of people who marry, the length of time they are married, and their frequency of sexual intercourse while married

(2) The probability of conception is affected by contraception and voluntary or involuntary infecundity (i.e., the inability to conceive)

(3) The probability of conception is affected by contraception and voluntary or involuntary infecundity. They went on to say that any intermediate variable has the potential to both boost and decrease fertility. However, they do not all have to work in the same direction. The net balance of all intermediary variables determines the observed level of fertility in a population.

I. Factors Affecting Exposureto Intercourse ("Intercourse Variables"):

(A) Those governing the formation and dissolution of unions in the reproductive period.

(1) Age of entry into sexual unions.

(2) Permanent celibacy: proportion of women never having a sexual union.

(3) Part of the reproductive period spent after or between unions:

(a) When unions are broken by divorcee, separation, or desertion;(b) When unions are broken by the death of a husband.

(B)   Factors Governing Exposure to Intercourse within unions.

(4) Voluntary abstinence.

(5) Involuntary abstinence (from impotence, illness, un-avoidable but temporary separations).

(6) Coital frequency (excluding periods of abstinence).

II. Factors Affecting Exposure to Conception ("Conception Variables"):

(7) Fecundity or infecundity, as affected by involuntary causes.

(8) Use or non-use of contraception.

a) By mechanical or chemical means;

(b) By other means.

(9) Fecundity or infecundity is affected by voluntary causes (sterilization, sub-incision, medical treatment, etc.).

III. Factors Affecting Gestation and Successful parturition (Gestation variables)

(10) Foetal mortality from involuntary causes.

(11) Foetal mortality from voluntary causes

Other socio-cultural factors

Mohammed Izhar Hassan, in his book "Population geography, a systematic exposition" points out some social, demographic and

economic factors that determine the fertility level of a population.

❖ Rural and Urban difference

Fertility disparities between rural and urban areas exist in every country. These disparities have shrunk significantly in the industrialized countries of the West in recent years, and it is believed that they will finally vanish as forces of modernity impose greater homogeneity in terms of people's attitudes and lifestyles. Rural-urban fertility disparities continued in several European countries, particularly in eastern and southern Europe, far into the second half of the twentieth century. Differences in population sex composition, the standard of living, childrearing costs, occupational status, income levels, educational attainment levels, female employment, and other factors all contribute to these disparities.

❖ Education

Another major feature of fertility disparities is the relationship between couples' educational achievement and fertility levels. One of the most important factors of fertility behaviour, particularly among females, is literacy and educational attainment. Women's educational attainment lowers their fertility rate in two ways. One, their educational activities postpone their weddings, minimizing the amount of time they are exposed to the birthing process. Second, as their educational attainment increases, their attitudes on family size shift, leading to a higher acceptance of family planning approaches.

❖ Religion

In any population, religion is another key factor of fertility. It is crucial to note, however, that religion has a greater impact on

fertility behaviour in less developed or developing countriesthan it does in industrialized countries. In some circumstances, a high fertility rate can be related to religious prohibitions on birthcontrol and views about the worth of children. In India, too, there is a significant discrepancy in fertility levels between religious groups.

❖ Economic condition

The most generally mentioned economic factors of fertility are a couple's or group's financial well-being, the husband's occupation, women's involvement in gainful employment, and so on. It is a global fact that there is an inverse link between a couple's economic condition and their fertility level. However, in industrialized countries, this relationship has changed dramatically in recent years.

B- MORTALITY

Mortality is one of the three components of population change, the other two components of population change are fertility and migration. The factor of mortality has historically played a prominent role in influencing population growth, with the sizeof the population fluctuating mostly in reaction to variations in mortality. In reality, the single most important contribution of demography has been the revelation that rapid population growth has been caused by sharp declines in mortality rates rather than any increase in fertility rates.

The study of mortality is valuable for analysing present demographic situations as well as predicting future mortality levels. The study of mortality is crucial to public health management because information on death in the population, cross-classified by age, sex, and cause of death, is extremely useful for the creation, implementation, and evaluation of public

health programmes. Insurance firms' policies are also based on statistics on deaths.

Concept of Mortality

Mortality refers to the frequency with which deaths occur. The study of mortality is concerned with how death affects the population. Though the meanings of the terms life and death are self-evident, precise definitions are required for scientific research into demographic dynamics. According to the United Nations and the World Health Organization "Death is the permanent disappearance of all traces of life at any time after birth (post-natal cessation of vital activities without a capacity for resuscitation,". As a result, death may only occur after live birth, and the time between birth and death is defined as life.

The above definition of death excludes any death before live birth, as defined by the United Nations: According to World Health Organisation or WHO, a live birth may conveniently be defined by saying that, 'a live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord had been cut or the placenta is attached; each product of such a birth is considered live born.'

As a result, any death that occurs before a live birth has clearly not deemed a death. As a result, abortions and stillbirths are referred to as foetal deaths rather than deaths. Abortion is defined as "any spontaneous or induced expulsion of the embryo before the foetus becomes viable, that is, capable of independent living outside its mother." A stillbirth is defined as a birth that

lacks any of the qualities listed in any of these two definitions of live birth or abortion.

Concepts related to Mortality

❖ Infant Mortality Rate (IMR): A measure of the yearly rate of deaths in children less than one year old. The denominator is the number of live births in the same year.

❖ Child Mortality Rate (CMR): The United Nations Children's Fund (UNICEF) defines this as the annual number of deaths of children under age 5 years, expressed as a rate per thousand live births, averaged over the previous 5 years. This rate is preferable to the child death rate, which is more difficult to determine in communities where the age of young children may not be known precisely.

❖ Maternal Mortality: A maternal death is death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

A late maternal death is the death of a woman from direct or indirect obstetric causes more than 42 days but less than 1 year after termination of pregnancy.

❖ Maternal Mortality Rate: The risk of dying from causes associated with childbirth. The numerator is the deaths arising during pregnancy or from puerperal causes, i.e., deaths occurring during and/or due to deliveries, complications of pregnancy, childbirth, and the puerperium.

SOURCES OF DATA

The occurrence of death is a critical event for which information is normally acquired through the vital event registration system. However, in developing nations, this approach is frequently insufficient because not all deaths are recorded. As a result, registration data cannot be used to analyse mortality in a meaningful way. The registration system in several major Maharashtra cities, such as Greater Bombay, Pune, Nagpur, and Sholapur, is quite adequate, and so information on fatalities accessible from these cities can be used in helpful mortality analysis. In the lack of reliable registration data, alternative sources of mortality data include the national census and demographic sample surveys. It is feasible to collect data on fatalities directly in sample surveys by asking questions on the number of deaths in a home over a given period.

CAUSES OF DEATH

The causes of death are an essential component of the study of mortality. The cause of death is usually stated on each death certificate certified by a medical person in terms of the immediate cause and the antecedent cause, as well as any other significant conditions related to the death. This data serves as the foundation for determining the causes of death. However, trustworthy data on causes of mortality is only accessible for a few nations. According to the United Nations, only about a third of the world's population had access to such information in 1960. The population of Europe and North America was 95 percent, Oceania was 80 percent, and Latin America was 50 percent. In Asia and Africa, only a small percentage of the population has statistics on the causes of mortality. Differences in nomenclature, certification methods, diagnostic techniques, and the interpretation of death certificates by coders make

international comparisons of causes of death by regions,continents, or countries were difficult.

Causes of death are categorized. A Manual on the International Statistical Classification of Diseases, Injuries, and Causes ofDeath has been published by the World Health Organization.The most recent change occurred in 1955. One thousand disease categories have been found, according to this Manual, and these have been regrouped into an intermediate list of 150 causesnumbered Al, A2, A3, and so on. These are then aggregated intoan abridged list of 50 causes labelled BI, B2, B3, and so on. Thisfinal list of 50 causes is used to calculate mortality and death rates based on the causes of death.

Again, from this list of 50 causes, various diseases have been divided into five groups based on their reaction to various health measures. These are the following:

I.   Infections, and parasitic diseases, and diseases of the respiratory system.

II.   Cancer.

III.   Diseases of the circulatory system.

IV.   Deaths by violence.

V.   All other causes.

It is possible to investigate changes in the causes of death with changes in mortality in nations where data on causes of death are available. In the recent past, mortality due to a group of diseases accounted for a significant share of total mortality in affluent countries. It has been noticed that death rates for males and females differ in most countries around the world. In

general, females have an advantage over males when it comes to mortality. It has already been stated that death rates were quite high and fluctuated around the world up to the eighteenth century. The following were the primary causes of such high mortality rates:

(1) Acute and chronic food shortages, causing famines and conditions of malnutrition

(2) Epidemics

(3) Recurrent wars

(4) Poor sanitary conditions.

Famine and food shortage

A man had minimal influence over his surroundings in the pre-industrial era, and variations in meteorological conditions such as droughts, floods, harsh winters, and scorching summers had a significant impact on his food supply. Other factors, such as labour inefficiencies, pests, and plant diseases, hampered agricultural production. Even when harvests were plentiful, food could not be preserved for future tough times due to inadequate storage methods, nor could it be moved to scarcity areas due to a lack of easy and inexpensive transportation.

Aside from acute famines, all of these countries had severe malnutrition as a result of limited food supplies, with the state of malnutrition weakening millions of people to the point where they became easy prey for illness. Men who were unable to work properly due to food shortages, both in terms of quality and quantity, were unable to do so. As a result, they reduced their own and the community's income.

Epidemics

Typhoid, dysentery, smallpox, malaria, typhus, tuberculosis, pneumonia, yellow lever, plaque, and other communicable diseases have plagued mankind since the dawn of time, as have juvenile communicable diseases such as enteritis, measles, whooping cough, scarlet lever, diphtheria, and so on. All of these diseases were common until recently, and they took a severe toll on people's lives. These diseases spread quickly in highly populated places due to personal contact, community use of polluted water and food supplies, and migration of people and disease-carrying flies from one location to another.

Recurrent wars

Throughout human history, the conflict has been a significant influence in determining population size. War's impact on human populations is two-fold. Military troops were the first to perish on the battlefield. Soldiers also died as a result of battle wounds. Deprivation and diseases linked with wars also contributed to the deaths of military troops. Some wars inadvertently killed a large number of civilians by spreading diseases carried by armies, plundering, and various other forms of social and economic disorganization.

Poor Sanitary Conditions

Sanitation has been exceedingly bad for the majority of mankind's history. There was little understanding of the importance of cleanliness in medicine. During the pre-industrial era. The standard of living was low; people's cleanliness was poor, and community sanitary facilities were non-existent. All of these causes contributed to unclean settings, which resulted in epidemics and a wide range of diseases. Large sections of the

populace lived in overcrowded, dark dwellings near industries even in the early phases of industrialisation.

These homes were inadequately ventilated, moist, and lacked light and sunlight, as well as inadequate bathing and toilet facilities. Factory working conditions were deplorable. The concept of personal hygiene was almost unheard of. Most individuals not only regarded filth and unsanitary living conditions as normal but also actively opposed the introduction of cleanliness. It was assumed that stench and foul odours were unavoidable. Thus, from the dawn of human history, food shortages, various types of death-dealing diseases, and unsanitary hygienic conditions have all resulted in high levels of mortality. However, in recent years, Man has largely won over these obstacles. As a result, worldwide mortality has decreased significantly.

Causes of Mortality decline in Developed or developing countries

Continuous economic improvement, coming from the Agricultural and Industrial Revolutions, has been the main reason for the drop in death rates in Europe, North America, and Oceania, which began slowly in the seventeenth century and then accelerated in the eighteenth and nineteenth centuries. Mortality has continued to drop in the twentieth century, though at a slower pace. There are "eleven elements" that have been identified as contributing to the drop in death rates in developed countries.

> ➢ Increase in the supply of food

> ➢ The real income of the people gradually increased

➢ Advances in technology and improvements in the standard of living

➢ Improvements in a sanitary condition and public health care measures

➢ Personal and community cleanliness

➢ Legislation bearing on the number of working hours and minimum wages was enacted

➢ Development of asepsis and antisepsis

➢ Development of immunology

➢ Advances in chemotherapy

Many developing countries' rapid decreases in mortality after WWII were mostly due to public health and disease-control methods imported from affluent countries and hence unrelated to economic progress. Developing nations can now absorb techniques developed by economically advanced countries and use them in large public health programmes at a low-cost thanks to scientific communication and international cooperation. The World Health Organization's support in eradicating mass killers like malaria, smallpox, and other diseases has proved beneficial. It should be highlighted, however, that continued reductions in mortality in poor nations will be largely dependent on their economic development, which will enable them to maximize the benefits of healthcare programmes.

Social and Cultural factors- Mortality

Even within the same country, there are significant differences in death rates for different subgroups of the population. For example, death rates in rural and urban sections of the same

country are vastly different. Within a country's borders, differences in mortality attributable to other demographic and socioeconomic characteristics can be seen in addition to differences related to geographical location. Occupation, income level, educational attainment, sex, age, and marital status are examples of such factors.

Urban-rural differential

In industrialized countries, the disparities in mortality levels between urban and rural areas are currently quite minor, according to the limited statistics available. However, in the past, there were significant discrepancies in death rates between urban and rural areas in these countries. Before the twentieth century, several countries' metropolitan districts had higher mortality rates.

Occupational and Other Differentials

It is now widely acknowledged that a person's surroundings and the occupation in which he earns a living have a significant impact on his health habits and status. The occupation of a man is tied to his education, and his income is determined by his occupation. His diet, housing environment, and behaviours may all be influenced by his money and education. The educational achievement of parents, particularly mothers' educational attainment, has been proven to have a substantial link with infant death rates.

Mortality by marital status.

In countries where mortality rates were studied concerning marital status, it was discovered that married males and females had lower mortality rates than unmarried people of the same sex and age. According to demographers and sociologists, the

causes for this phenomenon may revolve around the fact that weddings are selective in terms of people's health status, with those who are healthy being more likely to marry, and so having a lower risk of dying. Furthermore, married people are more secure and protected, and they tend to live a more sober life than single people. All of these factors are thought to play a role in married people having reduced death rates.

Mortality in India

Before 1921, the history of India's population expansion was the story of a titanic battle against death. Up to 1921, the subcontinent's population increase was frequently accompanied by famines and epidemics. During these enormous disasters, millions of people died. Despite the fact that death rates are critical to understanding India's population expansion, it is unfortunate that true death rates from those early times, when rates were extremely high and changing, are unavailable due to a severely flawed death recording system. However, demographers have attempted to predict death rates and infant mortality rates, and have created Life Tables for India based on census data and other relevant information.

During the decade 1911-1921, the devastating Influenza epidemic raced over India in 1918, killing more than 15 million people, according to Kingsley Davis' estimations. That is why the average annual death rate for that decade was the highest (48.6 per thousand population). The average yearly Indian death rate fell from 48.6 per thousand population to 18.9 per thousand population between 1911 and 1971, a drop of more than 61 percent. The projected crude death rates from 1970 onwards, that there have been huge swings in India's crude mortality rates, and that over five years, just a one-point drop has been accomplished.

Because of terrible mortality conditions, an Indian's average life expectancy at birth was quite low during the first two decades of the twenty-first century. However, the mortality situation in India has improved over time, and the average life expectancy has climbed in each decade. In the past, India's fight against death was focused on three major areas: the abolition of wars and banditry, the control of famines, and the abolition of epidemics. The progress on these three issues was "slow, laborious, and time-consuming." The battle, however, is far from ended, despite significant reductions in mortality. Although India's death rate has decreased significantly, it remains quite high when compared to other Asian emergingcountries.

Migration: Types of Migration- Internal and International, Factors of Migration

Migration

From the beginning of world onwards the process of migration was visible for improvement of the existing situation. The primitive man moved from one place to another without consider geographical locality. They significantly give important to basic necessities for existence such as food and shelter. But the primitive men are an emigrant who migrated to one place to another for food items even after the construction of residence. They may be shifted to natural calamities or for the survival of life.

The migration was originated due to various reasons and different period of time in history. The majority of the people completed to move due to wars, epidemics, natural calamities, famines, religious persecutions or population pressure for surviving rest of the life.

Charles Tally (1978) points out that the 3 causes of long distance migration.

1) The changing geographic distribution of employment opportunities

2) Demographic imbalances

3) Action and policies of nations.

Migration is a massive problem with enormous ramifications for all human communities. The other two components of population change are fertility and death. Migration is the third component of population change. Migration, on the other hand, differs from fertility and mortality as a component of population change. Though a variety of social, economic, political, and cultural factors influence a population's fertility and death rates, these elements mostly operate within the biological framework.

According to Lundquist, Anderton and Yaukey, "Migrations are those population movements that add or subtract from the members of a population or society." Migration is the movement of people from one place to another with the intention of settling in the new location permanently, temporarily, or seasonally. Traditionally, migration was categorized according to its direction, distance traveled, and length of stay in the destination country. Through migration, which may or may not result in a long-term change of domicile and may cross political administration boundaries. Migration rates, unlike birth and death, are vulnerable to substantial and unexpected variations in population increase. However, migration is influenced by socioeconomic reasons. Not just in the places where migrants go, but also in the places where they come from, migration has an impact on mortality and fertility.

Meaning and Definition

The word migration has been derived from the Latin "Migare" which means to change one's residence. Literally, it means the settlement or shifting of an individual from one cultural area or place of habitation to another, more or less permanently.

❖ Mandal- "Migration is known as the movement of people from one permanent residence to another permanent or temporary residence for a substantial period by breaking social and cultural ties"

❖ United Nations Multilingual Demographic Dictionary- migration as a form of geographical or spatial mobility between one geographic unit and another, generally involving a change in residence from the place of origin or departure to the place of destination or arrival'.

❖ Everett Lee- "migration as a permanent or semi-permanent change of residence".

❖ Eisenstaedt, "Migration refers to the physical transition of an individual or a group from one society to another. This transition usually involves abandoning one social setting and entering another and different one."

Migration study is significant in population studies because, together with fertility and death, migration impacts population size, dispersion, and growth, as well as its composition and characteristics. Migration has been a more prominent topic of interest for population geographers than the other two components.

Types of Migration

Migration is a permanent move that entails crossing an administrative unit's boundary. Such movements are referred to as **international migration** when they cross a country's national border. **Internal migration**, on the other hand, is migration that occurs within a country's territorial borders. In the case of international migration, emigration refers to the departure of an individual or a group from a country, whereas immigration refers to the entrance or entry into a country. In terms of internal migration, the phrases out-migration and in-migration are interchangeable. In fact, each movement is emigration (or out-migration) for the origin or departure location and immigration (or in-migration) for the destination location.

Gross migration refers to the overall number of migrants entering and exiting a location, area, or country, whereas net migration is the balance of migrants entering and exiting a location, region, or country. In other terms, net migration refers to the increase or decrease in a region's overall population as a result of migration.

It is possible to migrate either voluntarily or forcibly. While **voluntary migration** is the result of an individual's or a group's choice, **forced migration** is the result of a sense of compulsion against the will or choice of those affected. People who are forcibly relocated do so for political reasons, whereas people who migrate voluntarily do so for economic ones. The phrase "**migration stream**" refers to a type of spatial mobility in which migrants have a similar point of origin and destination.

Internal Migration

Internal migration is the process of population redistribution within a country's national borders. Despite the fact that the

migrants do not cross any international borders, such movements frequently result in significant population shifts. Evidence suggests that, in both industrialized and developing portions of the world, population shifts within countries in response to numerous social, economic, and demographic reasons. Apart from distinct migratory waves in many countries, the industrialization and urbanization processes have resulted in a major displacement of people from rural to urban areas.

Another factor that has contributed to this rural-urban migration in less developed parts of the world is the disparity in development levels between the two areas. The three main sources of information on international migration are periodic national censuses, population registers, and sample surveys. Thethree main sources of information on international migration are periodic national censuses, population registers, and sample surveys.

International migration

Since the beginning of time, man has been a mobile creature. People have been moving over the earth's surface incessantly for thousands of years, and the current distribution of the human population around the globe owes much to this mobility. Any long-distance travel during the early times was laden with risks, and migratory movements were mostly governed by physical causes. There used to be a lot of casualties in the migration process.

Many of those who did make it made it only to perish in the new home's foreign geographical conditions. However, advancements in transportation and communication gave long- distance migratory patterns a new direction as time passed.

During the previous five centuries, the world has undergone extraordinary demographic shifts.

Factors of migration

Five categories can be used to classify the major elements that encourage people to relocate. Economic variables, demographic considerations, socio-cultural issues, political factors, and other factors are among them.

(i) Economic Factors

The majority of studies show that economic factors are the driving force for migration. Low agricultural income, agricultural unemployment, and underemployment are regarded as basic elements in developing countries, driving migrants to developed areas with more job prospects. As a result, nearly all studies agree that the majority of migrants travelled in quest of better economic prospects. The primary economic variables that drive migration can be divided into two categories: 'Push Factors' and 'Pull Factors.'

The push factors are variables that urge a person to leave a certain location and travel to another location for various reasons. Low productivity, unemployment, and underdevelopment are frequent push factors, as are pooreconomic conditions, a lack of opportunity for advancement, natural resource depletion, and natural disasters. The introduction of capital-intensive production methods into the agricultural sector, as well as the automating of some processes, reduces the need for labour in rural areas. In rural areas, the lack of alternate sources of income is also a significant factor driving migration.

The Pull Elements are factors that draw migrants to a location. Better job opportunities, greater income, facilities, better working conditions, and appealing amenities are all draw factors for a location. Economic migrants are lured to international migration by the potential of higher income, better job possibilities, and, in many cases, a desire to flee their home country's domestic social and political circumstances. Most of these migrants are from middle-income nations, where the population is growing increasingly educated. Salaries and salaries, on the other hand, are likely to remain low in comparison to those in other, higher-income nations for those with similar educational backgrounds.

(ii) Demographic Factor

Internal migration is influenced by disparities in population growth rates among different regions of a country. Fertility and natural population growth are often higher in rural areas, causing the population to migrate to the city. Marriage is another key demographic component in internal migration because women are accustomed to following their spouses.

(iii) Socio-cultural Factors

In migration, social and cultural variables have a significant impact. Family problems and the need for independence can lead to migration, particularly among the younger generation. Improved communication facilities, such as transportation, the impact of television, good network connectivity, the cinema, and urban-oriented education, as well as the resulting shift in views and values, all help to encourage migration.

(iv) Ecological Factors

Other Forces are exacerbated by climate disruption. Climatechange is undoubtedly the most serious of the natural issues that force people to migrate. Climate change has the potential to amplify the effects of social, political, and economic push factors during the next decade. Even if people affected by climate change migrate only a short distance, their social, political, and economic dynamics may be altered. Whentraditionally separate tribal, ethnic, and religious groups are forced to coexist due to customary areas no longer being able to support human settlement, the risk of social issues grows.

(v) Political Factors

Political issues can sometimes stimulate or discourage migration from one region to another. As a result, people's political backgrounds, opinions, and individual perspectives influenced migration. The politicization of religious and ethnic identities has the potential to lead to substantial intra-state conflict. Empirical research implies that states transitioning from authoritarian leadership to democracy are more likely to experience instability and internal strife.

(vi) Technological development

In addition to the liberalization of labour markets, technological advancements in communications and transportation have the potential to enhance the pace of circular migration. Individuals migrate between an origin and a destination on multiple occasions in this type of migration. Individuals are generally motivated by economic incentives to relocate to countries with greater job opportunities before returning to their home country. Circular migration has been proven in studies to have favourable development results. Most crucially, circular migrants are more likely than those who permanently reside in their destination

country to send higher remittances back to their home country. Furthermore, issues such as brain drain and a labour force hollowing out are mostly avoided.

(vii) Miscellaneous Factors

Other factors that drive migration include the presence of relatives and friends in urban regions, as well as the desire to pursue an education that is only available in metropolitan areas. Migration is also linked to close cultural interactions, cultural diversity, high vitality, and individual views.

Impact of Migration on population

Migration, unlike fertility and death, has two effects: the location of origin and the place of destination. Moving also has an impact on the personal life of both movers and non-movers. Frequently, the effects for a single immigrant differ from those for the entire population. One way that immigration has an impact on the region of origin is that it reduces the region's population growth potential. This can occur in one of two ways. People leaving a region reflect negative population entries. People who leave an area tend to be younger, which diminishes the population's reproductive capacity.

In terms of the destination area, migration increases the population in two ways: directly and indirectly. The total number of immigrants has a direct bearing on the situation. The number of children born to these immigrants after they arrive is an unintended consequence of their arrival. The magnitude of the direct influence is determined by the relative sizes of the immigrant and receiving populations. The size of the indirect effect is determined by the reproductive characteristics of the immigrant and adoptive populations. If immigrants already have more children than residents of the destination, the area will be severely impacted.

In a place where mass migration, there will be a lot of pressure. This is especially true if the area's actual population is quite tiny. Rural-urban migration is one of the major factors contributing to urban population growth. On the basis of Age and Skills Migration from rural areas adversely affects the rural population structure. Whether stresses become serious problems is determined by the migrants' socioeconomic qualities and the workforce's ability to accommodate newcomers.

A migrant's opportunity to live in a social, economic, political,or physical environment in which he or she believes he or she is more desired than the former environment is a significant benefit. Whether or not this is the case depends on the correctness of the immigrant's perception of the situation in the old and new surroundings, as well as the immigrant's capacity to utilise the new environment's advantageous aspects. Second, whether or not the immigrant has useful talents and how fast he or she is absorbed into the current culture are factors to consider. Individuals from various cultural and linguistic backgrounds when people migrate to a new location, their cultural variety expands. Tolerance levels of migration are ultimately determined by cultural variables. Gradually newcomers may absorb new features of social institutions and value systems.

Keeping in mind that migration is a powerful component of population mobility, the general consequences of migration, i.e. two interrelated processes: I national population decline in the locally and in some cases most adversely affected by migration, and (ii) concentration of population in the regions offering a combination of accessibility, affluence and nice climate. The population's long-term decline is indistinguishable from local economic development. On the other hand, migration is a major driver force of development and also leads to problems in developing and developing countries.

UNIT 4   POPULATION   TRENDS   IN 21ST CENTURY

Structure
Population Explosion
Age and Sex Structure.
Urbanization–Rural-Urban Population,
Population, Development and Environment Linkages

STRUCTURE,   CHARACTERISTICS   AND   DYNAMICS   OF POPULATION

The study of population is concerned with its size or numbers, its structure and characteristics, its distribution and the changes taking place in it over a period of time. It is also implied in this description that the subject matter of population studies includes the study of fertility, mortality, migration and social mobility, that is, the components of change in the size, structure, characteristics and distribution of population. In this module mainly deals with different concepts like fertility, mortality and migration as well as different characteristics and structure of population such as Sex and Age Characteristics, Marital Status, Education, Occupation and Religion etc. This module enable you to analyse different social and population changes within the context of basic population terms.

Population Structure and Characteristics: Sex and Age Characteristics, Marital Status, Education, Occupation and Religion

A study of population structure and features is an essential part of a population study. As previously stated, population research aims to answer the following questions: What types of people are found in any given population, and how do those in one group differ from those in another. The study of population structure and characteristics, also known as population composition, is a br anch of population studies that encompasses the following basic personal, social, and economic

characteristics or attributes of any population: age, sex, race, nationality, religion, language, marital status, household and family composition, literacy, and education, employment status, income, etc.

Population structure and characteristics

Each of the aforementioned qualities can be used to divide a population into sub-groups. When it comes to sex, for example, the entire population may be divided into two categories: males and females; when it comes to religion, the entire population can be divided into several religious groupings. The distribution of one or more of these features or qualities within a population is the subject of population structure and characteristics study. A study of population structure and composition considers the distribution of these traits and their comparisons at a given point in time in addition to investigating changes in population features or attributes across time.

There are several applications for studying population structure and characteristics:

(1)   It facilitates in-depth analysis of any population, allowing for comparisons

(2)   Data on population structure and characteristics are useful in the preparation of human resource inventories, which are required for elective developmental planning

(3)   When reliable information on births and deaths is not available from the civil registration system, it can be obtained by utilising the census system.

(4)   Data on the distribution of demographic attributes can be used to investigate the population's social and economic structure, as well as any changes in that structure.

Ascribed and achieved characteristics are two types of characteristics or features that are studied in the study of population structure and characteristics. Biologically or culturally given race and mother tongue are examples of ascribed features. Nationality, religion (and caste) are examples of assigned qualities that can be changed later by an individual's choice, despite the fact that he or she is born with them. On the other hand, attained traits are those that are generally up to the individual's discretion. Attributes such as marital status, educational attainment, labour force status, occupation, industry, and so on are examples of such attained characteristics.

A national census is the primary source of information on population structure and characteristics. The person interviewed during the census is the most important source of information for a study of population structure and characteristics.

Sex and Age characteristics

Sex and age are the fundamental characteristics, or biological attributes, of any demographic group, and they have an impact on not only it's demographic but also its social, economic, and political structure, as they influence birth and death rates, internal and international migration, marital status composition, manpower, the gross national product, educational and medical service planning, and housing. Estimates of the school-age population can be made based on the sex-age distribution of any population, and on that basis, one can estimate the number of educational facilities, teachers, playgrounds, textbooks, and so on that would be required. Estimates of the number of voters,

newcomers to the labour force, and so on can also be made. Even in the realm of social welfare, the planning of social services—for example, for mothers and children, the elderly, and so on—must be based on the population's sex-age distribution.

Data on the population is invariably categorized by gender and age before being made available to data users. Male and female statistics on fertility, mortality, migration, marital status, and economic variables are presented individually and cross- classified according to age. Sex and age are also key indications of social rank since they are "visible, irrefutable, and handy." On the basis of sex and age, each individual is assigned a social position.

Similarly, sex and age influence his or her expected function in the family and community. These are determined by culture and differ from one culture to the next. Even within the same culture, some changes occur with time. It is commonly known, for example, that in a traditional Hindu household, status is determined by sex and age, with men being more significant than women. Women and the elderly are more essential than the youth. However, the situation has altered significantly in recent years, and many women now work outside the home, whilst males do not. This has also occurred in huge cities in developing countries.

Sex structure

Sex is an easily distinguishable trait, and its binary nature makes classification simple. Data on sex is also readily available. The following two measures are commonly used to investigate the sex structure of any population: (1) the masculinity proportion, or the percentage of men in the population, and (2) the sex ratio.

The number of males per 100 females or the number of females per 100 males can be used to express a population's sex ratio. The current discussion of sex structure will be based on the former meaning of sex ratio, which is the one that is used around the world, even though the Indian census prefers the latter definition. When the sex ratio is expressed as the number of men per 100 females, a value more than 100 denotes a high sex ratio, while a value less than 100 denotes a low sex ratio. The overall sex ratio is the sex ratio of the entire population at a given point in time.

SEX RATIO IN INDIA

In 1971, India's sex ratio was 107.5, indicating that males exceeded females in the overall population. It's worth noting that this pattern has existed since the turn of the twentieth century and that the magnitude of the male-female ratio has been bigger with each census, except the 1951 census.

In comparison to other emerging and developed countries, the high sex ratio seen in India and other culturally similar countries is remarkable. As a result, some of the reasons that are responsible for this atypical pattern or a higher number of males than females in the entire population must be identified. These factors could be (1) Differential enumeration of males and females in the Indian Census; (2) Unusually high sex ratio of births in India; (3) Higher mortality of females in India; and (4) male-dominates international migration.

Age Structure

According to the United Nations "The estimated or computed interval of time between the date of birth and the date of the census, expressed in completed solar years". It has also been suggested that age information be collected in the census

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by asking the individual's date of birth (day, month, and year) or by asking a direct question to obtain information on the age at the previous birthday, or by asking both of these questions at the same time. Though asking for the date of birth produces more precise age information, it is not always possible to get the date of birth from a community where the majority of people are illiterate or semi-literate. In this case, age information is gathered by asking about "the age completed on the most recent birthday."

Though asking inquiries about age is simple enough, getting accurate information about age when persons are illiterate or semi-literate and unaware of their age is incredibly challenging. Birth certificates are not available to Indians because the practice of reporting births is not yet widely practiced in India. Because Indians rarely have to present proof of age, there is a significant deal of apathy on the subject of the correct age. Carelessness in calculating age, misunderstanding of the inquiry, or wilful untruth can all lead to age reporting errors.

Because age data might be faulty for a variety of reasons, demographers must first assess it to establish the nature and extent of inaccuracies, then make the required modifications before using it for demographic research.

Analysis of age Structure

Age data are frequently presented in single-year increments, such as the number of people in the population aged 13, 14, 15, and so on. However, age data is rarely utilised in this format for demographic analysis. It is common practice to divide them into age groups of five years, such as 0-4, 5-9, 10-14, 15-19, 20-24, and so on. The age data is then divided into mutually exclusive age groups, which can be used to analyse the age structure of

any population and for a variety of analytical purposes. A simple mathematical metric like the percent distribution and an equally simple measure like the age pyramid is routinely used to study the age structure of any population. The average age (mean, median, and mode) and a few additional indices based on the distribution of people in distinct age groups are also used to analyse the age structure.

People of working age, children under the age of working age, and people over the age of working age are the three broad age groups used to compare the age patterns of different populations. The age groups are as follows: under 15, 15 to 64, and 65 and up. Demographers have noted that the age structure of developed countries has changed over time and that the current age structure of many developed countries is significantly different from what it was previously.

Factors Determining the Age Structure of Population

Changes in the three elements that influence a population's growth rate, namely fertility, mortality, and migration, are also responsible for determining a population's age structure, which is mathematically dictated by fertility, mortality, and migration levels.

• The Effects of Fertility and Mortality

Demographers did not fully comprehend the implications of changes in fertility and death on a population's age structure until 1950. However, the advent of demographic models in the early 1950s substantially increased our understanding of this relationship, and we can now estimate the relative roles of fertility and mortality in establishing the age structure of any population. The age structure of the population in the West underwent

significant changes, with a decline in the number of children under the age of 15 and a rise in the population of 65 and older, increasing the median age. As a result, over time, these populations may grow "elderly." Demographers explained the rise in the proportion of the elderly population as the result of the combined effect of decreased fertility and mortality rates.

• **Effects of migration on age structure**

It is not difficult to establish clear generalizations about the influence of these factors on the age structure of a population because it is feasible to identify the age groups that are affected by changes in fertility and mortality. Changes in fertility affect the bottom of the age pyramid, but changes in mortality affect newborns and young children in poor nations and older age groups in rich countries, as previously stated. In terms of the consequences of net migration on age structure, no such universal guidelines can be established. For this effect to be determined, two crucial criteria must be considered: the age distribution of net migrants and the volume of net migration.

• **The impact of wars on the age structure**

War casualties, which disproportionately harm males in younger age groups, have a direct impact on a population's age-sex structure. Wars have an indirect effect on fertility, thus they affect age structure as well. Men in the armed forces are separated from their wives for long periods during a war, which limits fertility. However, in the immediate post-war years, there is frequently a "baby boom" as couples reunite and weddings that had been postponed due to the war are finally consummated. As the smaller-sized cohorts during the war and the larger-sized cohorts after the war rise upwards over time, the age-sex pyramid is impacted.

- ## **Marital status**

The distribution of people according to their marital status is part of the study of a population's features. Unlike sex or age, married status is an acquired trait rather than a naturally determined trait. For a variety of reasons, studying a population by marital status is beneficial. The first step in the establishment of a biological family is marriage. Because most societies only allow for reproduction in wedlock, the marital status distribution is an important factor affecting fertility, along with the proportion of people who have never married, the proportion of people in reproductive age groups (15 to 44 or 49), the age at marriage, and the proportion of people whose marriages have been dissolved by divorce.

The combined effect of many biological, social, economic, religious, and legal elements affecting marriage determines the pattern of marital status distribution in any culture. For example, the universality of marriage in India can be explained by the fact that among Hindus, who account for 82.71 percent of the population, marriage is necessary primarily to enable a man to fulfil the duties associated with the second stage of his life, 'Grihasthashram' as well as for progeny and pleasure.

Marriage is crucial for a woman because, while a man may get numerous sacraments throughout his life, she is only allowed to receive one: Because of the Hindu religion's influence, Indian women married young. As a result of these circumstances, India's proportion of women who never married is substantially lower than in many other countries. The information needed to examine the marital status distribution of any population is normally obtained from the national periodic census, which collects information on the marital status of all people over a particular age and makes it available to demographic data users.

Individuals should be divided into the following categories based on their marital status, according to the United Nations:

(1) Single (never married) (2) Married and not legally separated

(3) Widowed and not remarried (4) divorced and not remarried

(5) Married but legally separated. Information on marital status is normally provided for those over a certain age, which is usually based on the country's lowest age limit for marriage.

• **Literacy and educational attainment**

One of the most important indices of social development is the level of literal and educational attainment, which is regarded as a key factor in the modernization process. Education has a significant impact on demographic behaviour in terms of marriage, fertility, mortality, migration, and labour force participation. In many investigations, a clear negative link has been demonstrated. Another demographic characteristic that is influenced by educational achievement is the age of females at marriage. Even new-born mortality appears to be influenced by the mother's educational background.

The International Institute for Population Studies' Fertility and Family Planning Survey, conducted in Greater Bombay in 1966, provides scientific support for several of these links. Women who were either graduate or had studied beyond that level had the greatest average age at marriage, while those who were illiterate or semi-literate had the lowest average age at marriage. There was both a direct and indirect association between women's educational attainment and their fertility, as well as a direct relationship between educational attainment and the use of family planning. When moms were either matriculate or had studied beyond that level, infant mortality rates were lower.

Statistics on literacy and educational attainment can be used for a variety of purposes. This type of information can be used to compare the level of social progress in different countries, regions, or even political divisions within the same country. These figures can also be used to create development strategies and educational policies.

Literacy and Educational Attainment- Data Sources: The national census is the most important source of information on population literacy and educational attainment. This data is collected generally during census operations in countries all over the world. The United States' annual publication, the Demographic Year Book, compiles data on literacy and educational achievement for all countries throughout the world.

Literacy-Definition: Literacy, according to the United Nations, is defined as a person's capacity to read and write a brief straightforward statement about his daily life while understanding it. The ability to read and write with "understanding" is an important part of the concept of literacy. A person who can just write his name or numbers, or who can ritualistically read religious books like the Koran or recite passages from such literature that have been memorized, is not deemed literate on this basis.

Literacy in India.

Since 1872, data on literacy has been gathered as part of Indian Census activities. Three categories were needed to classify the population according to literacy status for the first three censuses, ending with the 1891 census: learned, literate, and illiterate. This categorization was incorrect because educated people who were still students claimed to be literate. Since 1901, the population has been divided into two groups: literate

and illiterate. Between 1901 and 1931, the concept of literacy changed slightly, but the capacity to read and write remained the same.

The situation of literate women in India is more disturbing than the slow growth of universal literacy. The female literacy rate was less than half of the male literacy rate in 1971. This low female rate could be one of the key causes of many of our socio- economic development issues. In India, there is a significant rural-urban disparity in the rates of various States and Union Territories.

Educational Attainment

The study of male and female educational attainment in the population is crucial for the research of population characteristics. The percentage distribution of various levels of educational attainment in the literate population over the age of 10 or 15 is used to quantify educational attainment. Because a significant number of literate males and females do not have any formal education or schooling, the category of "literate but without formal education" must be created. It has been estimatedthat one-fourth of India's literate population is illiterate due to a lack of formal education.

RELIGION

Religion is crucial among a population's different social featuresin that it influences various sorts of demographic behaviour. While sociologists look at religion from a variety of perspectives, demographers use it as a variable when looking at marriage, fertility, mortality, migration, and other topics. Various studies focus on the association between religious affiliations and fertility behaviour. The precepts of religion have a significant impact on societal norms and behaviours involving weddings; as a result, it is vital to investigate age at marriage

and dissolution of marriage, widow remarriage, the prevalence of polygamy, and other factors about religious affiliations.

Understanding these marriage traditions is crucial in the study of fertility because they have an impact on social fertility. Acceptance of family planning, women's status, and religious beliefs are all intertwined. It is also crucial to know the religious affiliations of the populations being examined when studying mortality because religion has a significant impact on a people's food, customs, and practices of personal and communal cleanliness. Religion has a significant impact on both internal and international migration. As a result, the variable "faith" has gained prominence in demographic research. Because it is difficult to gather and classify information on people's religious affiliations at the worldwide level, this type of demographicstudy is only done at the national level.

Religion plays a significant role in India's societal structure, and as a result, religious data has been collected since the beginning of census operations. Before independence, however, this variable received more attention, and data on religious affiliation was cross-classified with other factors including age, sex, marital status, literacy, rural-urban domicile, and so on. Earlier census reports include a detailed description of India's many religious communities. Census scholars investigated the differences in the growth of various groups as well as the reasons behind these differences. However, after independence, the focus of census data analysis has turned away from religious to economic elements of the people.

The percentage distribution of people in various religious organizations is frequently described in demographic analysis of religion. For various States and Union Territories, up to the district level, this type of study is done by sex and by rural- urban habitation.

Self-Instructional Material **49**

UNIT 5   POPULATION POLICY71

Structure
   Population Policy–Meaning and Importance.

POPULATION GROWTH, DEVELOPMENT, POLICIES AND PROGRAMMES

Population are dynamic, it means that change in population size overtime. Most countries in the world are showing increase in the populations. The major cause of population growth is the decrease in death rate and rise in the life span of the average individuals. Technological development and massive development in medical sciences are also the major factors to increase human population. The growth of the population have a major impact on the living standard of the people. So, increasing population is one of the biggest concerns of all in India and many other countries. In this module discussing population growth in India with special focus on Kerala's different socio- cultural aspects. Apart from that, Population growth also plays a conflicting role in the development process of a country. A population control program and policies should be launched by the government to tackle the issues emerging due to population explosion. In this module will enable the readers to understand different population policies and programmes.

4.1- Population Growth in India with Special focus on Kerala -Education, Health, Socio-economic development

In India, the first census was taken in 1871, and it was repeated every ten years after that. As a result, changes in population numbers, structure, traits, and so on may be studied throughout the last century. Kingsley Davis based his estimations of population size in India during the ancient, medieval, and early

modern periods on a detailed assessment of archaeological data, relevant literature, and historical records left behind by historians.

Population growth- A review in the Indian context

India has been known for its densely populated people from ancient times. Excavations at Harappa and Mohen jo-Daro demonstrate that India had a highly developed civilization and vast, densely populated towns as early as the third and fourth millennium B.C. The first true Indian empire, which existed over three centuries before Christ and was ruled by Chandragupta Maurya, was able to keep a standing army of roughly 700,000 men. It is reasonable to assume that a huge population was required to maintain such a large army.

According to Moreland, a well-known historian, India had a population of roughly 100 million people in 1600 A.D. Unfortunately, there is relatively little documentary material on which to base estimations of population size for the years 1660-1870. From 1871 onwards, a more solid foundation for studying India's population has been provided. These actual counts, on the other hand, cannot be trusted because, with each census, new regions were covered and advances in census methodology were made.

In 1867-1871, the population was 203.4 million, whereas the corrected figure was 255.2 million.' The population of India grew at a pace of 0.9 percent between 1867 and 1881, according to adjusted estimates, whereas it grew at a rate of 9.4 percent between 1881 and 1891. During the period 1867-1871 to 1504, sporadic rates of population expansion were also observed. The enormous mortality caused by different disasters, such as famines and epidemics, was the underlying cause of such ups

and downs. In 1876-1877, a devastating famine struck during this period. There were a succession of catastrophic famines and a plague pandemic throughout the decade 1891-1901. The All- India Census Report of 1901 includes a detailed timeline of the famines that occurred between 1891 and 1901, which were mostly blamed on "poor monsoons" and "monsoon failure." Famines led to the deaths of five million people during this decade.

It is important to note that territorial changes happened between 1901 and 1971 as a result of the division of the Indian subcontinent into two countries, India and Pakistan.

(1) Up until 1921, the rate of population growth was erratic. The decades of significant growth alternated with decades of moderate rises, with a negative growth period from 1911 to 1921.

(2) Since 1921, the absolute number of persons added to the population over each decade has increased.

(3) Since 1921, the decennial rate of growth has likewise increased. The compound rates have also changed. India's population has been expanding at an incredible rate since 1951.

According to the 1971 Census, the population was at 548 million people, accounting for about 15% of the world's population although accounting for only 2.4 percent of the total land area. According to the 1971 Census, India's population density was 178 people per square kilometre.

On March 1, 1977, India's population was estimated to be 616.5 million by the Expert Committee on Population Projections. It is estimated to be 658 million in 1981. According to the Registrar-estimations General's based on the Sample Registration Scheme,

the birth rate in 1971 was 36.8 per thousand population, with a mortality rate of 14.9 per thousand, resulting in a growth rate of 22.0 per thousand, or 2.2 percent. The birth and death rates in 1974, however, were reported to be 34.5 and 14.5 per thousand, respectively, resulting in a growth rate of 20.0 per thousand, or 2.0 percent.

India, like many other countries, has gone a long way from the early days of evolution, when relatively high levels of fertility were required for species survival owing to famines, accidents, disease, infections, and conflict. It has seen a huge rise in life expectancy as well as a steep drop in mortality over the years, as it has become better able to deal with illnesses and the whims of nature. The population did respond to measures to lower fertility as a result of changing social mores and government interventions, but the continuous growth in the number of women of reproductive age has resulted in a high number of births each year.
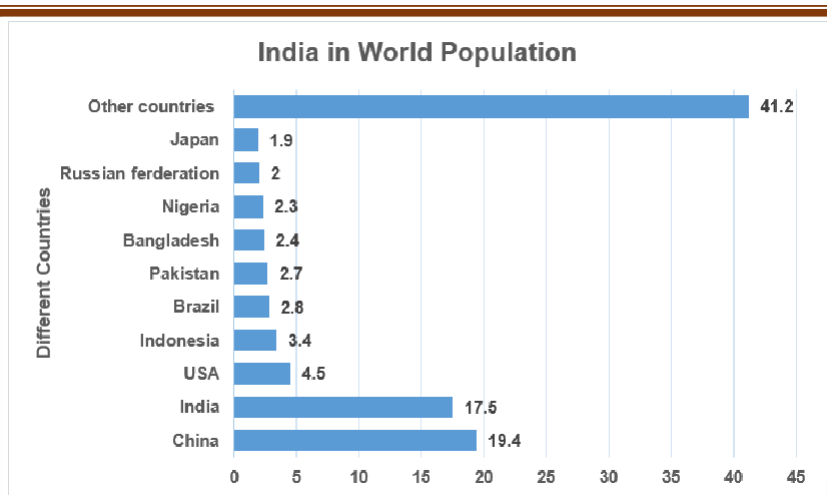
Current Population growth In India

At the turn of the twentieth century, India's population was estimated to be around 238.4 million people. In a hundred and ten years, this number has expanded by more than fourfold, reaching 1,210,854,977 in 2011, with 623, 724, 248 men and 586,469, 174 females.

Census Years	Population	Decadal Growth		Change in Decadal growth		Average annual exponential growth rate (Percent)	Progressive growth rate over 1901 (Percent)
		Absolute	Percent	Absolute	Percent		
1	2	3	4	5	6	7	8
1901	23,83,96,327	-	-	-	-	-	-
1911	25,20,93,390	1,36,97,063	5.75	-	-	0.56	5.75
1921	25,13,21,213	-7,72,177	(0.31)	-14469240	-6.05	-0.03	5.42
1931	27,89,77,238	2,76,56,025	11.00	28428202	11.31	1.04	17.02
1941	31,86,60,580	3,96,83,342	14.22	12027317	3.22	1.33	33.67
1951[1]	36,10,88,090	4,24,27,510	13.31	2744168	-0.91	1.25	51.47
1961	43,92,34,771	7,81,46,681	21.64	35719171	8.33	1.96	84.25
1971	54,81,59,652	10,89,24,881	24.80[6]	30778200	3.16	2.20	129.94
1981	68,33,29,097	13,51,69,445	24.66[6]	26244564	-0.14	2.22	186.64
1991[3]	84,64,21,039	16,30,91,942	23.87	2,79,22,497	17.12	2.16	255.05
2001[4]	1,02,87,37,436	18,23,16,397	21.54	1,92,24,455	10.54	1.97	331.52
2011[5]	1,21,01,93,422	18,14,55,986	17.64	-8,60,411	-0.47	1.64	407.64

Source:-https://censusindia.gov.in/2011-prov-results/prov_results_paper1_india.html

In the first half of the twentieth century, India's population increased by a factor of 1.5, whereas in the latter half, it increased by a factor of three. The table below illustrates India's population increase by decade from 1901 to 2011. India, the world's second most populated country, with more than 17 percent of the world's people yet only 2.4 percent of the world's surface area.

India in World Population

Different Countries	Value
Other countries	41.2
Japan	1.9
Russian ferderation	2
Nigeria	2.3
Bangladesh	2.4
Pakistan	2.7
Brazil	2.8
Indonesia	3.4
USA	4.5
India	17.5
China	19.4

Source:-http://mospi.nic.in/sites/default/files/Statistical_year_book_india_chapters/ch2.pdf

In 2011, India's population was nearly equivalent to the combined populations of the United States, Indonesia, Brazil, Pakistan, Bangladesh, and Japan, totaling 1214.3 million people.

According to the state-by-state population distribution from the 2011 census, Uttar Pradesh is the most populous state, with nearly 200 million people (16 percent of the total population). Maharashtra and Bihar (each with 9% of the total population) have crossed the threshold into the over 100 million population group. Over ten million people presently live in twenty states and union territories. On the other hand, there are five states and union territories that have yet to attain a population of onemillion people. The population dispersal is depicted in the maps below, based on provisional totals (1210.2 million), which have since been updated to 1210.8 million.

Population growth and Development of Kerala

The origins and history of Kerala's development process, from ancient times to pre-independence colonial control and post-independence democratic rule, reveal that numerous elements underpin Kerala's educational success, even when the rest of the country trailed behind. For example, substantial missionary activity and the governments of the erstwhile princely realms of Travancore and Cochin in the late nineteenth century, as well as the impact of various social reform movements in the early twentieth century, must be mentioned. The contributions of early twentieth-century socio-religious reform groups, missionaries' work, and democratic governments' progressive policies laid the groundwork for the state's education, health, and social services infrastructure.

As is already generally known, there is one state in India, Kerala, that has performed significantly better than the others in terms of social and economic growth. Kerala's success demonstrates that, even at low economic levels, people's well- being can be improved and social, political, and cultural situations modified by effective public intervention. The most essential aspects of public action in Kerala have been the acts of mass groups and mass movements against social, political, and economic oppression, as well as government policy measures.

The State's development on a variety of fronts is built on the solid foundations of previous triumphs in land reform, health, school education, social justice, gender equality, and social protection. According to the Kerala development report, there is a significant development in the fields of various sectors, especially, education, health, Industrial sectors, agriculture, technology, telecommunication and transportation, even the changes in populations.

Density

According to the 2011 census, Kerala's population density is 860 people per square kilometre. Tamil Nadu has a population density of 555, Karnataka 319, Andhra Pradesh 308, and India has a population density of 382. Thiruvananthapuram (1,508) has the highest population density, while Idukki has the lowest population density (255). Except for Pathanamthitta and Idukki, population density grew in all districts during the 2001 and 2011censuses.

Sex ratio

According to Census 2011, Kerala's sex ratio (number of girls per thousand males) is 1084, up 26 points from 2001. Kerala had a sex ratio of 1022 in 1961, which climbed to 1016 in 1971. In 1981 and 1991, it grew to 1032 and 1036, respectively. Tamil Nadu has a sex ratio of 996, Karnataka has a sex ratio of 973, Andhra Pradesh has a sex ratio of 993, and India has a sex ratio of 943.

Kannur has the highest sex ratio (1136) among the districts, followed by Pathanamthitta (1132). Idukki has the lowest ratio (1006), while Ernakulum comes in second with 1027. Every district has a sex ratio of over 1000. Only Wayanad had a ratio below 1000 in 2001. (994). There is a 130-point gap between the lowest (Idukki, 1006) and highest (Kannur, 1136) scores.

Education

Many historical, cultural, and social aspects influence a country's educational growth. The rate of population increase, particularly the level and trajectory of the birth rate, is a critical

issue. The way people thought about the development process was also changing, giving education a bigger role. Growth in the Gross National Product (GNP) was the primary gauge of progress for economists concerned with development. While it was clear that a high degree of economic development could not be attained with a mostly illiterate population, formal economic models traditionally ignored "human capital" as a factor of economic growth; nevertheless, this gradually changed. A rising number of economists have discovered evidence that human capital, especially education and health, has significant societal economic benefits.

Literacy

Kerala has the greatest percentage of literate people in the population of any Indian state. The effective literacy rate in the United States is 93.91 percent. At the time of the 2001 Census, literacy was at 90%. The literacy rate in the United States is 72 percent. Kottayam leads the district literacy rankings with 97.2 percent, followed by Pathanamthitta with 96.5 percent. With an 89.3% literacy percentage, Wayanad is the state with the lowest literacy rate, followed by Palakkad with an 89.3% literacy rate. Even Wayanad's lowest literacy rate (89%) is greater than the national literacy rate. Except for Palakkad (89.3) and Wayanad (89), other districts have a score above 90. The difference in value between the lowest and highest is only 8.2. All of the districts' literacy rates have improved since 2001.

Kerala ranks first in terms of literacy among states and union territories. Kerala's effective literacy rate in Census 2011 was 94.00 percent, with 92.98 percent in rural areas and 95.11 percent in urban areas. Kerala had a literacy rate of 90.86 percent in 2001. During the last decade, the effective literacy rate has increased by 3.14 percentage points. The district of

Kottayam has the greatest literacy rate (97.21 percent), while the district of Wayanad has the lowest literacy rate (89.03 percent). At the same time, we must keep in mind that the literacy rate in India is 72.99 percent.

The male literacy rate has improved by 1.87 percentage points, to 96.11 percent. The female literacy rate has improved by 4.35 percentage points in the recent decade, to 92.07 percent, according to Census 2011. Educational facilities at all levels of education in the state have grown dramatically over the previous 50 years. The enormous movement of pupils from unassisted to government schools between 2016-17 and 2019-20 is a visible result of the state government's efforts to improve the quality of teaching and learning in state schools. During this time, 500,000 additional pupils applied for admission to government and government-aided schools. The government has spent the last four and a half years investing extensively in new-generation public schools across Kerala, intending to provide the finest possible education to every child in the state.

The first step toward universalizing school education is to make schooling facilities available to wider student populations in both rural and urban locations. Kerala has a stronger schooling infrastructure and other supporting services than many other Indian states, and it is more evenly spread throughout regions and social categories. However, the majority of school buildings and other supporting infrastructure, notably in the state's government schools, are quite advanced in today's society.

Kerala has been working to develop Information Technology Education in schools since 1994. In 2001, the 'IT @ School' was established to guide and strengthen computer education in schools. The goal was to make it possible to employ information technology to improve the quality of the teaching and learning

environment in schools, as well as to teach pupils fundamental computer knowledge and skills. Kerala outperforms other Indian states in terms of social parameters such as literacy and school enrollment, particularly for girls, Scheduled Caste, and Scheduled Tribe kids. The state government takes considerable care to ensure that schools have appropriate infrastructure and sanitary surroundings.

Government policy has emphasized strengthening welfare programmes, educational provisioning through scholarships and home study facilities, skilling, and new efforts for those belonging to the Scheduled Tribes. For members of the Scheduled Castes, similar programmes in the areas of welfare, education, and skill development were conducted. Every society's demographic shift, social development, and economic growth are all impacted by education, which has an impact on everyone's economic future and social well-being. Education is a universally acknowledged human right.

Health

Despite scholarly disagreements, the Kerala model continues to draw national and international populations due to its superior social development results. The health sector is one of the major sectors where the south Indian state has regularly outperformed other Indian states. Kerala has continuously ranked first among Indian states in terms of health outcomes, with high life expectancy, low infant mortality, and low birth and death rates. International agencies have termed Kerala's health situation as "Good Health at Low Cost" and "Good Health with Social Justice and Equity." Its health system has served as an example for other Indian states, not just in terms of progress, but also in dealing with public health issues.

Kerala's outstanding performance in the health sector is not a new or recent phenomenon; it is a well-known reality. For example, while the national infant mortality rate reached 74 in 1991, Kerala's rate stayed at 13. While Kerala remained the only state with a positive sex ratio, with more females than males in its population, rates of fertility, infant mortality, and other factors began to fall in the 1970s. The state's early entry into the third phase of demographic transition reflects its long-term intentions to be a welfare-oriented state from the start. Kerala's experience differs from that of other countries, particularly those in Europe and North America, in that it did not coincide with large-scale industrialization. With the development of neoliberal policymaking in the 1990s, this paradigm has fundamentally changed.

With shifting emphasis, the state's economy has increased by multiple times. In the field of healthcare, the private sector has emerged as a major player. Despite the national and global trend, Kerala's governments have maintained considerable investments in public healthcare. The share of the senior population (60 years and older) is likely to differ amongst states as fertility continues to fall and the expectation of life at birth rises. The proportion of elderly people aged 60 and over is predicted to rise from 13% in 2011 to 23% in 2036 in Kerala, where reduced fertility and mortality rates were attained earlier than in other states. By 2036, nearly every fifth person in Kerala is predicted to be a senior citizen.

In contrast, the proportion of people aged 65 and up is predicted to rise from 7% in 2011 to 13% in 2036 in Uttar Pradesh, meaning that the state's population will be younger than Kerala's. Kerala's population median age is projected to rise from 31.9 years in 2011 to 39.6 years in 2036. In Uttar Pradesh, on the other hand, the median age is anticipated to rise from

21.5 to 31.7 years. Kerala's health sector has been a benchmark for other states due to significant gains in health indices such as high life expectancy, low infant mortality, birth rate, and death rate, and Kerala's health sector has been a benchmark for other states due to significant gains in health indices such as high life expectancy, low infant mortality, birth rate, and death rate.

Emerging Health Problems/challenges of Kerala

Despite the State's achievements in the health sector at the national and international levels, the major issue is to maintain the advances earned. Furthermore, the State is dealing with issues such as non-communicable diseases (NCDs), rising morbidity, the rise and re-emergence of communicable diseases, large-scale privatisation, and geriatric health issues. Aside from these, new hazards to the state's health include mental health concerns, suicide, substance misuse & alcoholism, teenage health issues, and an increase in the incidence of road traffic accidents. In comparison to the general population, the health of marginalized communities such as tribes, fishermen, scheduled castes, and plantation labourers remains poor.

Socio-economic development

Since the mid-1960s, Kerala's economy has changed dramatically. Since the early 1990s, it has evolved from a primarily rural agrarian economy with modest growth rates to a high-growth service-oriented economy. It has gone from being a low-income state during its agrarian economy to becoming one of the highest-income states in terms of per capita income. It has successfully shifted from a high birth-death rate to a low birth- death rate in terms of demographics.

On the social front, Kerala has been a forerunner of a new developmental model that focuses on the fundamental aspects of

human development rather than the traditional trappings of economic success. Large-scale international migration of low-skilled and semi-skilled employees has occurred. Kerala has also been effectively used as a testbed for political, social, welfare, and governance initiatives aiming at empowering people and providing safety nets for the needy. These changes have occurred within the framework of the Indian economy's overall liberalisation and globalisation.

While the effects of globalisation on the Indian economy have been widespread, one of the ways in which the Kerala economy has been impacted is through efforts to create an investor- friendly business environment in the face of worldwide competition and foreign investment flows. These broad economic shifts have had a variety of effects on the economy as a whole. However, one of the most significant repercussions has been on the economy's labour market.

Urbanisation and development

Kerala's decadal growth rate has been dropping at a faster rate than the national average since 1981. Kerala's decadal growth rate between 2001 and 2011 was the lowest since independence, at only 4.9 percent. It is significantly lower than the nation's overall decadal growth rate of 17.64 percent. Since 1981, the disparity between India's and Kerala's population growth rates has widened. The addition of the state to the total population of the country accounts for only 0.83 percent of the 181 million people that joined the country's population between 2001 and 2011.

The State had a population of 6.4 million people in the first census of the twentieth century (1901), with 5.9 million (92.9%) living in rural areas. Only half a million people lived in cities,

accounting for less than ten percent of the state's total population. Over a century, the proportion of people living in rural areas has steadily decreased, reaching 74% of the overall population in 2001.

Except for 2001, the decadal growth rate of the rural population has been dropping since 1971. This pattern is partly due to the state's distinct settlement structure. Unlike the other parts of India, the habitation of the State is spread continuously without many open lands or fields separating habitations. A rural environment is seen elsewhere in India which typically consists of enormous tracts of agricultural land with hamlets spread sporadically. In Kerala, however, some small and medium towns are scattered throughout the countryside.

In 2011, the population of the state was approximately evenly split between rural and urban areas, according to the 2011 census. The state today has a 159 million urban population, accounting for 47.7% of the total population, compared to a 174 million rural population (52.3 %). In 2011, the urban population grew at a decadal pace of 92.72 percent. Thrissur district has the most towns, with 135, accounting for more than a quarter of the total towns in the state. Thrissur, Kannur, Ernakulam, and Kozhikode districts account for almost 60% of all towns. In eight districts, the urban population has surpassed one million. Between 2001 and 2011, the urban population growth index increased in all districts except Idukki. The urban population growth index in Malappuram has increased significantly, followed by Kollam, Thrissur, and Kasaragod. The state of Wayanad has the lowest index value.

When the concept of gender is introduced into planning circles, it becomes easier to see repressive practices against women as concerns profoundly rooted in unequal social connections

between men and women. Of course, there are other sexual/gender minorities, like Transgenders, who are stigmatized and discriminated against because their gender identity or gender expression does not match their assigned sex at birth, which is now officially acknowledged.

Women's empowerment and autonomy, as well as their political, social, cultural, and economic position, are all essential goals in and of themselves. Women's empowerment must be understood as a process of change that improves women's position in society, with important components including women's access to improved levels of education, health, livelihood, and resources; recognition, reduction, and redistribution of responsibilities in domestic and 'care' work; the greater voice in decision-making; participation in the process of development and public life in a safe and secure environment; and enhancing gender consciousness.

Much has been written about Kerala's high female literacy rates, particularly during the sharp drop in fertility in the 1970s (total fertility rate declined from about 3.7 in the 70s to 1.8 in the 90s, which is below replacement level). Kerala had a literacy rate of 91.98 percent for women (65.46% for India) and 96.02 percent (82.14) for males in 2011, which was significantly higher than the national average. Much has been written about Kerala's high standing for women and their historical involvement in social progress.

However, while Kerala's social transformation was profound over time, it was also uneven, and one indicator of this unevenness is the persistence of feudal-patriarchal attitudes and institutions, notwithstanding high women's literacy, education, and health-care standards. In modern Kerala, patriarchy is manifested by a widespread social devotion to women's

domestic roles, the perception of males as home heads, and women internalizing patriarchal ideals. High levels of literacy and female education did not translate into rapid increases in paid employment or upward occupational mobility for women.

Agriculture

Agriculture and agricultural modernization are critical elements in the development of the state. The key goals for the agricultural sector are to increase productivity, profitability, and production sustainability. Agriculture must be modernized by science-based inputs and farming practices to increase productivity. Better sustainability emphasizes farming practices that keep the environment's health in mind. High profitability means larger farm business profits, and better sustainability emphasizes farming practices that keep the environment's health in mind. The Kerala government's agricultural programme has shown dividends. After several years of decline, the agriculture sector's annual growth has increased.

Industry

The importance of industry in development is predicated on the fact that industrialization may quickly enhance revenues and wealth. The industrialization process aims to increase people's well-being by enabling them to live in more modern and high-quality society. This is because, in comparison to agriculture, the industry is thought to be able to develop more quickly.

From 2016 onwards, a reversal in the manufacturing sector has been critical to the revival of Kerala's economy. Kerala's manufacturing industry has grown steadily in value terms in recent years, particularly over the last four years. Manufacturing's contribution to Kerala's gross value increased from 9.8% in 2014-15 to 12.5 percent in 2019-20. Kerala's

proportion of gross value added by India's factory sector climbed from 1.2 percent in 2014-15 to 1.6 percent in 2016-17, according to statistics from the Annual Survey of Industries. Despite the economic downturn, Kerala's manufacturing sector rose by 1.5% at constant prices in 2019-20.

A recovery in the performance of State public sector companies (particularly in the chemicals and electrical machinery sectors) and continued vigour in the expansion of micro, small, and medium enterprises are two major highlights of Kerala's improved manufacturing sector performance from 2016-17 onwards (MSMEs). Over the last few years, one of Kerala's significant achievements in the field of the industry has been a favourable shift in perception among potential entrepreneurs.Important events, such as Ascend, were hosted in 2019 and 2020to entice industrial investment to the state. Kerala also enacted policy changes to make conducting business in the state easier. One of the primary initiatives under the Industries Department's Ease of Doing Business Reforms in the Kerala Micro Small Medium Enterprises Facilitation Act 2019.

Kerala has begun work on a high-tech industrial corridor that would connect Kochi and Palakkad. The corridor is intended to attract significant investments in high-tech manufacturing, agro-processing, information technology, biotechnology, and life sciences, and will serve as one of Kerala's important hubs for industrial development.

Migration and Development

The act of moving inside or beyond boundaries, whether temporarily, seasonally, or permanently, is known as migration. It's usually related to a question of choice, and it's the best thought of as voluntary. Economic opportunities in foreign

nations are powerful driving forces of migration, which can be leveraged as a tool or key to abolishing poverty. People are constantly on the move in pursuit of a safer, better environment in which to live in peace and economic prosperity, and hence migration is regarded as a growth and development engine.

People can travel across borders more easily because of improved transportation and contemporary technology. 258 million individuals, or 3.4 percent of the worldwide population, live in countries other than their own. The number of international migrants has more than tripled since the early 1970s. The main source of motivation for migration is work and a good wage. Migrant workers account for two-thirds of all international migrants, with the majority settling in high-income nations. Migration can provide significant benefits in terms of income, education, and health for these individuals and their families.

According to the Kerala migration survey, 2018, points out that Kerala has 21.22 lakh emigrants living all over the world. Gulf nations are the most popular destination for Kerala emigrants, with almost 89 percent of emigrants working there. The remittances collected from emigrants are an important role in the state's economic activities running smoothly. Not only does it boost state revenue, but it also boosts consumption, savings, and investment, as well as manufacturing value addition and industrial development.

Many of them have lost their employment as a result of the Covid 19 outbreak and have returned to Kerala. Remittances from the NRK have dropped dramatically. There has been a significant inflow of return immigrants into the state from other nations since the start of the covid-19 pandemic. From January to August 2020, around 4.81 lakh emigrants returned to Kerala.

Sixty-six percent have lost their jobs. Aside from that, 372 emigrants died as a result of Covid 19 in other nations.

Transportation and development

Any region's economic development is heavily influenced by transportation. Urban population increase will put more strain on public transportation systems. The state of Kerala has made significant expenditures in transportation infrastructure. Railroad, highway, and airport networks have improved mobility and helped economic development in the state by facilitating the flow of products and people between and among rural and urban areas. Workers in Kerala have better access to jobs, manufacturers have better access to markets, the ill have better access to health centres, and students have better access to schools and universities because of improved transportation infrastructure. Transportation infrastructures, in general, are complementary to one another and have an impact on urban growth, economic growth, and economic productivity.

India has a vast road network that allows millions of people to travel every day. It possesses the world's third-largest road network, with a total length of 4.88 million kilometres. According to the World Bank, India's National Highways cover 92,851 kilometres, accounting for only 2% of the total road network yet carrying 40% of the country's total traffic. Only 24% of the whole national highways network has four-lane carriageways, with the remainder being single-lane or two-lane.

Indian Railways is the world's second-largest railway system, managed by a single company (66,687 km of route length). Freight contributes approximately 67% of the Railway's total revenue. With an increase in private participation of operating

airlines and incremental improvements in airport facilities, civil aviation is rapidly gaining prominence in passenger movement.

Telecommunications

Telecommunication is one of the most important support services for the economy's rapid growth and modernization. Since independence, India's telecommunications service has vastly improved. Kerala's government has announced the creation of the state's communication infrastructure, known as K-FON (Kerala Fibre Optic Network), to improve communication in rural areas, provide high-speed connectivity to all government and educational institutions, and provide internet to the state's economically disadvantaged citizens. A new optic fiber line will be built in parallel to the KSEB electric power network to provide universal basic internet access to all citizens and government machinery.

There are no universal standards that guide development because it is a complex process. However, there is a general belief that population expansion is an important aspect of the social and economic development process. Population expansion isn't necessarily bad for development, especially in industrialized countries with scale economies and enough human-physical capital to invest in new projects. In comparison to developed countries in the past, developing countries now have a favorable environment for economic progress. As a result, we can say that. The expansion of the population and the development of the country are inextricably linked.

Population Policies: Mortality, Fertility and Migrationinfluencing Policies,

Pro natalist and Anti-Natalist Policies

What is Population policies?

A policy is described as a set of important goals complemented by a set of specific methods for achieving those goals. A well-elaborated set of means constitutes a programme. A successful policy must be based on a sound theory that connects the means to the ends, yet on social issues, judgement regarding the relationship between inputs and results or the process is often required. Policy must be founded on scientific evidence— testable hypotheses about causes and effects—but it also necessitates value judgments. A positive population policy aimed at lowering the birth rate and eventually stabilising the population growth rate.

Population policy can be defined as the deliberately constructed or modified institutional arrangements and / or specific programs by which governments seek to directly or indirectly influence demographic change.

➢ Edwin Driver defines population policy as all "direct and indirect measures which, intended or not, may influence the size, distribution, or composition of human population".

➢ Berelson defines them as "government actions that are designed to alter population events or that actually do alter them".

The definition's broad scope allows for a variety of interpretations. The goal of population policy in any given country can be narrowly defined as bringing about quantitative

changes in the membership of the government's territorially limited population. Births and immigration are the only ways to gain membership; emigration and deaths are the only ways to lose it. In a broader sense, policy purpose could try to change qualitative components of these phenomena—fertility and international migration—such as population composition by demographic features and population spatial distribution.

Berelson proposed three key characteristics of any population policy. The first characteristic is a government action, which might take the form of a declaration of policy, laws, decrees, or administrative programmes. It is also feasible to study the population policies of both smaller and larger institutions, such as ethnic groupings, the UN, or religious communities such as Roman Catholics or Muslims. A population policy's second feature is that it addresses population events. The third element is that it relates to both tire intents and outcomes, i.e., acts that are intended to or do alter population occurrences.

The three components of population change—fertility, death, and migration—are particularly important in the context of population policy since they are the only demographic variables that are influenced by them. As a result, it's important to talk about population policy in terms of these three aspects of population change.

A-   Mortality influencing policy

Mortality policies, of course, are always aimed at lowering mortality. Following WWII, the World Health Organization created a revolutionary concept of public health and vowed to eliminate sickness. Most countries have national programmes to combat "mass killers" like malaria, smallpox, cholera, and other diseases. Even developing countries have embraced the World

Health Organization's idea of positive health, which is defined as "a condition of total physical, mental, and social wellbeing, not only the absence of disease or infirmity." Health-related population programmes have resulted in historic reductions in mortality in emerging countries, regardless of their socio- economic development level.

According to a United Nations report, there hasn't been a single pandemic since 1918, when influenza killed 25 million people worldwide.' "As might be expected, all Governments have formulated policies designed to reduce morbidity and mortality, and none has considered acceptable a policy of permitting survival rates to remain low in order to prevent: further morbidity and mortality," the United Nations Secretariat writes in a review of population policies and programmes prepared for the World Population Conference in 1974.

In this context, it's worth noting that the final version of the contentious World Population Plan of Action, agreed in 1974 at the United Nations World Population Conference in Bucharest, refers to only one targeted ideal—mortality. "By 1985, countries with the highest mortality rates should strive for a life expectancy of at least 50 years at birth and an infant mortality rate of fewer than 120 per thousand live births."

B- Fertility influencing policies

Policies that aim at influencing fertility may be of two types; pro-natalist and anti-natalist.

(i) Pro-natalist Policies-

A pro-natalist policy is a population policy that aims to encourage more births through the use of incentives.

Pro-natalist policies have existed in some form or another since ancient times, and they were justified by high mortality rates; they flowed from a demographers worldview that connected power and prosperity with big numbers. During the interwar period, the expansionist impulse in population policy achieved a pinnacle in Germany, Italy, and Japan. Intensive pro-natalist advertising, monetary rewards and honouring of motherhood, repression of birth control, regulation of emigration, implementation of "eugenic legislation," and drives for greater native and racially "clean" populations were among the means employed for this goal.

Three ways to an effective pro-natalist strategy are described by Thomlinson. The first strategy is to accept existing values and attitudes while removing or reducing the financial burden of having children. The second strategy is to change the norms by elevating reproductive values. The legal measures adopted in this strategy include decreasing the marriage age and reintroducing the old custom of divorce based on infertility. The third method is to loosen the talo0s on illegitimacy, albeit most nations have strong cultural norms that prevent such a strategy from being accepted. Hitler experimented with all three methods.

Several wealthy countries have implemented pro-natalist policies in recent years, however, each has different motivations and techniques.

- Sweden- Swedish policy oriented towards sustaining the birth rate with consideration of individual welfare and personal freedom.

- France- The 'Code ded laa Famille' of 1939 outlines the various measures adopted in pursuance of the Pro-natalist policy.

- Israel- in 1966, implemented a pro-natalist policy with the grant of financial aid to large families and restrictions on induced abortions

- Japan- implemented with several programmes having demographic implications, such as the Eugenics Protection Law of 1948, which made abortion easily available, and Government-sponsored programmes for the promotion of contraception.

(ii) Anti natalist Policies

An anti-natalist strategy tries to reduce the number of births. This can be accomplished by family planning education and enhanced contraception access, or through legislation (China's One-Child Policy). Anti-natalist policies have been promoted by various groups of people with various social and political beliefsat various times.

The Greeks considered a good population to be preferable to a big one, and their goal was to ensure the survival of the fit as citizens. When Plato recommended 5,040 individuals for a city- state with a total population of roughly 50,000, he intended it to be large enough to assure economic self-sufficiency and military defence, but small enough to allow for a constitutional government with significant citizen contact. Plato and Aristotle both emphasized the importance of population quality. Aristotle also advocated for abortion as a method of birth control and the eugenic abandoning of defective infants. To keep the city-state

from becoming too big, he proposed limiting the number of children any couple may have.

When Malthus released 'An Essay on the Principle of Population as It Affects the Future Improvement of Society' in 1798, attention was once again focused on the population problem and the need to manage it. While the Malthusian idea has been criticized for a variety of reasons, the thing that matters, in this case, is that his religious convictions hindered him from realizing. The potential for widespread contraception use. Anti- natalist policies can be direct or indirect. Some policies are classified based on whether they are short-term or long-term; however, because most policies have both short and long-term impacts, it is preferable to treat them based on whether they affect fertility directly or indirectly.

Direct anti-natalist policies

(a)   Provision of Contraceptive services: The policies relating to contraceptive services are among the most important direct policies. Individual couples are expected to accept family planning, lower fertility at the micro-level, and thereby reduce the birth rate, if such services and educational programmes are provided.

(b)   Liberalisation of Abortion law: Japan's dramatic halving of its birth rate in a decade, largely through the use of abortion, has demonstrated the stark efficiency of this method of population control. Though no country expressly states that liberalised abortion laws are in line with anti-natalist objectives, several countries' attitudes toward abortion have shifted significantly in the previous twenty-five years. Several emerging countries were discovered to have liberal abortion legislation in

1975. China, India, Singapore, Hong Kong, and the Democratic Republic of Vietnam were among those in Asia.

(c)   Increasing the Age of Marriage. Women's fertility is known to be influenced by their age at marriage, in the sense that if their age at marriage is low, they start having children at a young age, and their offspring, in turn, start having children at a young age. We shorten women's reproductive spans and hence lower fertility by raising the age at which they marry.

Indirect antinatalist policies

Anti-natalist policies can be indirect, in the sense that they may not be directly intended at reducing fertility, as in the case of contraception, abortion, and a higher marriage age, but may function indirectly by influencing contraception and/or abortion acceptance and causing an increase in marriage age. Bernard Berelson used the term "Beyond Family Planning" to describe some of these efforts.

Incentives: Incentives, according to Rogers, are "direct or indirect payments in cash or in-kind made to an individual,couple, or group to stimulate an overt behavioural change," in this case, the adoption of a family planning strategy. In family planning programmes, there are a variety of incentives that can be granted to either the adopting or the person who persuades the adopter, or both. Individuals, groups, or both may be offered these incentives. They can be compensated either in cash or in kind.

Disincentives: While incentives in some form or another reward individuals who use or encourage others to use family planning, disincentives or negative incentives penalize those who do not. The disincentives are usually in the form of benefits being taken away or a penalty being imposed.

Singapore has recently provided a stunning example of how effective social policies relating to family planning can be devised and implemented.

The following disincentives were incorporated in these policies in 1958:

(1) In the allocation of subsidized public housing, couples with a large number of children would not be given priority over newlywed couples

(2) Under the Employment Act, no paid maternity leave would be given after the third child

(3) The subsidized accouchement fees in Government Maternity Hospitals were modified so that higher fees were charged for higher parity confinements.

Improving Women's Status: Women's standing in traditional societies is often low. In such societies, having children restores the wife's status, as a childless lady is looked down upon. Women's education is maybe the first step in this direction. According to research, the one factor that is usually linked to lower fertility is the wife's educational status. Various research in India has found that women's educational status is inversely associated with fertility.

Women's status in the household is likely to improve as a result of education. Women's advancement will aid in realizing the idea of a marriage based on communication and camaraderie between husband and wife, joint decision-making, and proper authority allocation. This style of marriage has been shown to be beneficial to family planning acceptance. The level to which women participate in the labour force is one measure of a country's women's status. Women who work outside the house

have lower fertility than those who do not. It is self-evident, however, that if women discover alternate forms of self-expression and self-development, they will no longer be satisfied with the roles of wife and mother and will opt for smaller families.

Social and economic development: It is well recognized that some types of social and economic changes have demographic consequences. After passing through the stages of declining death rates and high birth rates, and then the stage of declining birth and death rates, developed countries and some developing countries' demographic transitions indicate that high birth and death rates gave way to low birth and death rates after passing through the stages of declining death rates and high birth rates, and then the stage of declining birth and death rates. This change has been accompanied by social and economic development." Following the influence of industrialisation and urbanisation, the large family system in the West was replaced by the small family structure.

When society shifted from an agrarian rural to an industrial urban economic base, it became clear that having big families was no longer advantageous, and the small family progressively supplanted the large family. Higher goals and expectations, resulting from increased economic and social development, influenced people to prefer fewer families.

Urbanizing rural communities: Residence, whether urban or rural, is one element that has been shown to affect fertility performance. The urban family, which is usually tradition-bound and resistant to change, is supposedly more sophisticated and exposed to new ideas through the mass media and non-familial connections than the rural family. These disparities result in fertility differences, with urban areas having lower fertility than

rural areas. A special programme may be implemented to modernize communities and reduce their isolation, which will have an impact on fertility.

Nutrition and health services to children: Large families have been reported to be motivated by high infant and child death rates. When your odds of surviving are little to none. Couples choose larger families in the hopes that some of their children will live to adulthood and outlive their parents. Infant and child mortality rates would be reduced as a result of improved nutrition and health services targeted specifically at children, and the need for a higher number of children would be reduced. Parents' perceptions would continue to be shaped by their own experiences as well as those of others, so this change would not be immediately apparent.

Social Security: In traditional households, one of the reasons for wanting a son is the assumption that he will look after his parents in their old age. Society can take over part of the family's economic security and support functions through the social security system. This system consists of schemes or services that offer benefits in cash or in-kind in the event of certain defined circumstances, such as sickness, maternity, unemployment, a job injury, invalidity, old age, and the breadwinner's death. The primary goals of such programmes or services are income security, medical care, income redistribution, and social justice.

Population Education: In recent years, there has been a growing interest in incorporating population education into school curricula and out-of-school youth programmes. It is believed that, as adults, people who have been exposed to population education will use family planning to keep their families small.

Migration influencing policies

Migration policy is an element of migration governance that is commonly used but not well defined. "International Organization for Migration's Migration Governance Framework (MiGOF) defines migration policy as the "law and policy affecting the movement of people" and includes policy on "travel and temporary mobility, immigration, emigration, nationality, labour markets, economic and social development, industry, commerce, social cohesion, social services, health, education, law enforcement, foreign policy, trade andhumanitarian" issue".

Internal migration, or migration within a country, and international migration, which includes both immigration and emigration, are the two components of migration policies. Internal migration is considered a constitutional privilege in most nations, hence the only thing national governments can do to relieve population pressures is to encourage internal movement. This is especially true when there are regional differences in density; per square mile or kilometre. Such attempts are not always successful because other factors, such as geography, available work possibilities, cultural affinity, and so on, play a significant influence in influencing internal migration.

Most countries are concerned about population growth rates in metropolitan areas, as well as considerable migration from rural areas to urban centres, which puts increased pressure on urban services. According to a United Nations examination ofpopulation policies, none of the more developed need nations (34) had policies that prevented migration to urban areas, whereas 10% of the less developed countries (98) had suchpolicies. Only 5 (7%) of the 67 countries that judged their urban

expansion to be "excessive" had strategies in place to restrict internal migration to these cities.

The remaining 62 (93%) allowed internal migration from rural areas to urban centres, however, 45 of these 62 had developed strategies to channel migration into non-metropolitan urban centres rather than prohibiting it entirely. When it comes to international migration, the majority of countries now have well- defined policies. International migration restrictions are becoming more stringent, and governments are enacting new legislation that restricts both entry and exit from their countries. To prevent "brain drain," a country may impose limits on the emigration of certain highly skilled professionals. India, for example, has put limitations on medical doctors emigrating, although its emigration policy is typically ill-defined and ambiguous.

Family Planning and Welfare Programmes

In 1952, India became the first country in the world to implement a national family planning programme. Since its inception in 1952, the Family Planning Programme has seen significant changes in terms of policy and programme implementation. There was a gradual change from a clinical approach to a reproductive child health approach, and the National Population Policy (NPP) in 2000 introduced a holistic and target-free approach to fertility reduction. Greater investment in family planning can thus help women reach the desired family size and avoid unwanted and mistimed pregnancies, reducing the consequences of excessive population growth.

Family planning programme in India

Family planning programmes have evolved significantly since their beginnings in 1952. Because India was the first country in the world to undertake a national family planning programme, planners mainly relied on the experiences of industrialised Western countries with their Planned Parenthood organisations. Family planning clinics were established under the Planned Parenthood Organization, and couples in need of family planning services went to those clinics. In India, a similar strategy, known as the clinic approach, was first implemented. Clearly, the 'clinical method' had its own set of constraints. The strategy could only reach a tiny portion of the population due to the socio-economic and psychological climate that prevailed in the country. As a result, in the early 1960s, the clinic strategy was supplanted by the extension approach.

The extension strategy entailed using an educational method to modify people's attitudes, beliefs, and behaviours towards family planning. It also means shifting the emphasis away from individuals or couples and onto the group. The realization that "the power inherent in a group itself to bring about change in deeply embedded habits is greater than the influence of individual instruction by outsiders" prompted this shift in focus. As a result, the strategy entailed finding some influential formal or informal leaders in each group and encouraging them to learn about population-related issues.

These well-known leaders were intended to popularise small-family values among their respective groups' members. Local bodies such as Panchayat Samitis, Village Development Committees, and others were also encouraged to participate in family planning programmes under this extension strategy. The supply side of family planning measures was also given due

consideration. As a result, the extension approach's basic principles were group acceptance, understanding of family planning, and easy access to goods and services. Although family planning programmes have generally focused on birth control from their beginnings, mother and child health issues have received equal attention. However, it was not until the Fifth Five-Year Plan that an express commitment was established in this area.

The strategy in the Fifth Five-Year Plan addressed "maternal and child health and nutrition services" as an important aspect of family planning programmes to increase public acceptability of family planning measures. This was necessary by the fact that achieving birth control targets would be extremely difficult if the country's infant and child mortality rate remained high. It was hoped that by taking this method, the services related to family planning would gain more legitimacy. This integrated approach has remained in place until now. As a result, the expanded scope of family planning operations included:

Immunization of babies and pre-school children against DPT, tetanus vaccination of expecting mothers, prophylaxis against nutritional anaemia in mothers and children, and prophylaxis against vitamin A deficiency-related blindness in children. The share of budget outlay for family planning planned for these health care initiatives in consecutive plans demonstrates the importance of these welfare programmes.

The Multipurpose Workers Scheme was established in the Fifth Five-Year Plan to satisfy the demand for comprehensive health and family planning services. The multipurpose workers were taught to give first aid and minor medical treatment, as well as health and family planning services and nutritional education. Inorder to have more access to, and acceptability among, people

particularly in rural regions, care was taken to ensure the inclusion of female members in the multifunctional employees. The opening of post-partum centres in medical colleges, district hospitals, and maternity hospitals in the following times was another characteristic of the integrated strategy. It was shown that when women go to hospitals for maternity care, they are ina good mood to learn about family planning. The post-partum clinics were created to take advantage of this scenario in order toexpand family planning services.

Meanwhile, by the early 1970s, mass vasectomy had gained universal acceptance as a method of birth control in family planning programmes. In the years 1970 and 1971, mass vasectomy camps were held in Kerala's Ernakulum district, where over 78 thousand vasectomies were performed in just six months. Various state governments were convinced to organize such camps as a result of this success. The camp approach, as it was known, necessitated a great deal of planning and inter- departmental coordination. This frequently meant diverting labour and resources away from other development projects. As a result of the tremendous push for mass vasectomy, other family planning programmes have been neglected.

The success of such camps was heavily reliant on top-notch medical treatment, and even a little oversight on the part of the medical staff could spell disaster. Several cases of tetanus- related deaths have been documented in various sections of the country. Furthermore, cases of various forms of coercion have been documented from various sections of the country. As a result, the camp approach quickly lost credibility, and the number of vasectomies performed plummeted. However, several states continued to hold mini-camps, which were smaller versions of the larger camps.

Recent initiatives in Family planning and welfare

These initiatives were initially coordinated under the National Family Planning Program, which was renamed the National Family Welfare Program in 1977. These efforts have been a key part of the National Rural Health Mission since 2005. Initially, the focus of these initiatives was on the health benefits of family planning rather than the demographic benefits.

For more than three decades, India's planned family planning efforts were dominated by a target-based approach to cut birth rates and slow population growth. This strategy was only superseded in 1996 by a decentralized community needs assessment approach that had a heavy focus on the health reason for family planning. The demographic rationale for family planning was completely subsumed in the health rationale for family planning with the launch of the National Rural Health Mission (NRHM) in 2005, to the point where the Department of Family Welfare within the Ministry of Health was merged with the Department of Health.

Family planning is now only one of several initiatives under the National Rural Health Mission's reproductive and child health component. In 2013, a comparable effort for the urban poor, namely the National Urban Health Mission (NUHM), was launched to address the needs of slum dwellers and other marginalized groups, and both NRHM and NUHM were merged into one umbrella named the National Health Mission (NHM). All state capitals, district headquarters, and cities/towns with a population of more than 50,000 people are expected to be covered by NUHM.

In 2013, the Reproductive and Child Health programme was renamed Reproductive, Maternal, New-born, and Adolescent

Health (RMNCH+A) to give a more unified approach to managing concerns relating to child and maternal health care. The new strategy was created to target the leading causes of death among women and children, as well as delays in accessing and using health care and services, with a special focus on vulnerable and neglected populations.

- Mission Parivar Vikas: The government has created Mission Parivar Vikas, which aims to significantly increase access to contraceptives and family planning services in seven high-focus states with TFRs of 3 and higher. The seven high-focus, high-TFR states (Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, and Assam) account for 44 percent of the country's population.

- New Contraceptive Options: The present range of contraceptive options has been widened to include new contraceptives.

- Redesigned contraceptive packaging: Contraceptive packaging has been improved and changed in order to impact demand for these commodities.

- New Family Planning Media Campaign: To increase contraceptive demand, a 360-degree media campaign has been started.

- Sterilization Compensation Program Improved- In 11 high-focus states, the sterilization compensation scheme has been improved (8 EAG, Assam, Gujarat, Haryana).

- As an alternative to the existing Intra-Uterine Contraceptive Devices, a new Intra-Uterine Contraceptive Device (Cu 375) with a 5-year efficacy has been added to the programme (Cu 380A with the effectivity of 10 years).

- Post-Partum Intra-Uterine Contraceptive Devices (PPIUCD) is a new method of insertion for intrauterine contraceptive devices.

- Emphasis on Postpartum Family Planning (PPFP) services with PPIUCD and promotion of minilab as the primary mode of sterilization in the form of post-partum sterilization to leverage on the large number of cases coming in for institutional delivery under the Janani Suraksha Yojana.

- Plan for ensuring sterilization clients receive drop-off services.

- Appointment of dedicated Reproductive, Maternal, Newborn, and Adolescent Health (RMNCH+A) counsellors in facilities with a high caseload.

- Guaranteed delivery of family planning services - Over the previous four years, states have demonstrated their commitment to improving fixed-day family planning services for IUCD and sterilisation.

- ASHAs provide contraceptives to beneficiaries' homes via a home delivery programme.

- ASHA (Accredited Social Health Activist) scheme to ensure birth spacing: ASHAs' services are being used to counsel newly married couples to secure a two-year delay in childbirth after marriage, and couples with one kid to ensure a three-year spacing following the birth of their first child under the scheme. The programme is currently being implemented in 18 states across the country (8 EAG, 8 North East, Gujarat and Haryana). West Bengal, Karnataka, Andhra Pradesh, Telangana, Punjab, Maharashtra, Daman Diu, and Dadra and Nagar Haveli have also authorized the spacing component.

- World Population Day (July 11) and fortnight (July 11 – July 24):

- The observance of World Population Day is a step toward bolstering Family Planning efforts across the country.

- The event takes place across a month, with a fortnight of mobilization/sensitization followed by a fortnight of guaranteed family planning service delivery.

- "Dampati Sampark Pakhwada," or "Mobilisation Fortnight," takes place from June 27 to July 10.

- The "Jansankhya Sthirtha Pakhwada," or "Population Stabilization Fortnight," runs from July 11 to July 24.

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